TRANSCRIPT OF RECORD.

IN THE

SUPREME COURT OF THE UNITED STATES.

OCTOBER TERM, 1901.

No. .....

SOUTHERN PACIFIC RAILROAD COMPANY et al.,
Appellants,

vs.

THE UNITED STATES OF AMERICA,
Appellees.

VOL. V.

(Pages 1855 to 2481, inclusive.)

Appeal from the United States Circuit Court of Appeals for the Ninth Circuit.

Filmer Brothers Co. Print, 424 Sansome St., S. F.

M. N.
F. Vol. F. 334 A., p. 433. W. C. E.
W. O. C.
77684.—'92 E. C. S.

Department of Interior.

General Landoffice,

Washington, D. C., August 12, 1892.

Register and Receiver, Los Angeles, Cal.

Sirs: With your letter of June 7, 1892, you forwarded the papers in the case of Joseph Crawford vs. Southern Pacific R. R. Co., involving the N. W. ¼, sec. 17, T. 7 S., R. 3 E., S. B. M., together with the company's appeal from your decision in favor of contestant.

Said tract is within the limits of the indemnity withdrawal made April 3, 1871, for the company named under the grant of March 3, 1871, and the records show it to have been selected October 3, 1887.

The withdrawal of these lands from pre-emption and settlement was revoked August 15, 1887 (6 L. D. 93), such revocation applying to all lands within indemnity limits except such as were covered by the company's selections. The order of August 15th made the restored lands subject to settlement from its date, but barred a filing or entry until thirty days after restoration to the public domain by advertisement for thirty days. This time expired October 7, 1887.

At the hearing, it was shown that Crawford settled upon the land in question in July, 1887, and that he was residing thereon and claiming it at the date of revocation of the withdrawal, as well as at the date of selection.

This, you held, defeated the company's selection, and recommended its cancellation and the allowance of Crawford's homestead application for the land.

In the appeal, the company's counsel alleges several errors in your decision, the most important of which is that the contestant's settlement was not made in good faith, but that it was made at the instigation of and in the interest of another, and that it was made for the purpose of acquiring the preference right of purchase from the company.

But I find nothing in the record to sustain these allegations, and, as your decision is in accord with the rulings of the department (see S. P. R. R. Co. vs. Stocks, 14 L. D., 192, and cases therein cited), it is now affirmed, subject to appeal within sixty days.

You will so advise contestant; also, that upon cancellation of the company's selection covering the land he will be permitted to enter it.

Very respectfully,

I. R. CONWELL,
Acting Commissioner.

John B. Bloss,
908 G. Street N. W., Washington, D. C.
On Appeal.

To the Hon. Secretary of the Interior, Hon. Commissioner of the General Landoffice.

Sir: Please take notice that the Southern Pacific Railroad Company hereby appeals to the honorable secretary of the interior from your decision "F," of August 12, 1892,

holding the company's selection of the N. W. ¼, sec. 17, T. 7 S., R. 3 E., S. B. M., Los Angeles, California, for cancellation in favor of Joseph Crawford under his homestead application.

The township plat was filed in the local office February 12, 1877. The said company selected said tract October 3, 1887, per list 25, duly designating the land lost. Crawford made his homestead application October 14, 1890, alleging a settlement on the land July 30, 1887.

The said company, as grounds of error in and exception to your decision, allege:

1. Error in holding the company's selection for cancellation, it having been duly certified to by the register and receiver, that there was no claim of record adverse to the company, and that the land was subject to selection by the company on October 3, 1887.

2. Error in holding that Crawford was entitled to homestead the land October 14, 1890, upon an allegation of settlement July 30, 1887.

First. If Crawford settled on the land at that date, it having been surveyed, he was required to file his application within three months from date of settlement; for if he settled on the land "with the intention of claiming the same under the homestead laws, shall be allowed the same time to file his homestead application and perfect his original entry in the United States landoffice as is now allowed to settlers under the pre-emption laws to put their claims on record, and his right shall relate back to the date of settlement, the same as if he settled under the pre-emption laws." (3 Sec., Act May 14, 1880; 21 Stat. 140.)

The general circular issued February 6, 1892 (page 11), referring to this law says "that the period of continuous residence and cultivation begins to run at the date of actual settlement, in case the entry at the district land-office is made within the prescribed period (three months) thereafter, or before the intervention of an adverse claim." As Crawford did not file his application within three months after settlement, and the adverse claim of the company had intervened and been of record three years before he offered at the local landoffice his homestead application, it was clearly error for the commissioner to hold it could then be received and his right dated back of the company's selection.

Second. That the company's selection took effect from its date is too well settled by decision of the department to require the citation of authorities. Its selection was made October 3, 1887. At that date there was no claim against it, and not until three years afterward did Crawford assert one antedating settlement. He was then too late, because "a homestead settler who fails to make application for the right of entry within the period provided by the act of May 14, 1880, is not thereafter protected as against the claim of another who has complied with the law." Pruitt vs. Skeens, 12 L. D., 629; Christensen vs. Methorn, 7 L. D. 537; M. B. McNeal, 6 L. D. 653.

I therefore ask that the commissioner's decision be reversed, and that the company's selection be held intact.

Very respectfully,

JNO. B. BLOSS,

Attorney Southern Pacific R. R. Co.

Washington, D. C., Oct. 6, 1892.

(Registered (Letter) No. 404. P. O. Washington, D. C.
(Parcel)

Received 10-6, 1892, of Jno. B. Bloss.

908 G. N. W.

A (Letter) addressed to F. Jordan
(Parcel)

Atty. at Law, Los Angeles, California.

Henry Sherwood, P. M., per Sage.

District of Columbia, }
County of Washington. } ss.

John B. Bloss, being duly sworn, says, that on this day he mailed to F. Jordan, Esq., Los Angeles, California, the attorney of Joseph Crawford, a copy of the above appeal.

JOHN B. BLOSS.

Subscribed and sworn to before me, this 6th day of October, 1892.

[Seal] W. CLARENCE DUVALL,
Notary Public,
D. C.

[Endorsed]: A8. Plaintiffs' Exhibit A8. To deposition of Joseph Crawford. Los Angeles, Cal., Oct. 8, 1896. H. S. Rollins, Notary Public.

Plaintiffs' Exhibit "A9."

M. N. (4-207a.) S. S. M.

Department of the Interior.

General Landoffice,

Washington, D. C., August 29, 1895.

I. E. F. Best, acting commissioner of the general landoffice, do hereby certify that the annexed copy of the de-

cision of the department made in the case of Joseph Crawford vs. S. P. R. R. Co., involving the N. W. ¼, sec. 17, T. 7 S., R. 3 E., S. B. M., California, and of a letter from this office to C. P. Huntington, demanding the reconveyance of said land to the United States, are true and literal exemplifications of the originals on file and of record in this office.

In testimony whereof I have hereunto subscribed my name and caused the seal of this office to be affixed, at the city of Washington, on the day and year above written.

[Seal] E. F. BEST,
Acting Commissioner of General Landoffice.

I. I. H. E. F. B. F. W. C.

Department of the Interior. E. W.

18—898. Washington, August 18, 1894.

SOUTHERN PACIFIC R. R. CO.
vs.
JOSEPH CRAWFORD.

The Commissioner of the General Landoffice.

Sir: With your office letter "F" of March 2, 1893, was transmitted the record in the case of the Southern Pacific Railroad Company vs. Joseph Crawford, involving the N. W. ¼, sec. 17, T. 7 S., R. 4 E., S. B. M., Los Angeles land district, California, on appeal by the company from your office decision of August 12, 1892, holding for cancellation the company's selection of said land, with a view

of allowing the application by Crawford presented therefor.

This tract is within the indemnity limits of the grant for said company along its branch line, and had not been selected prior to the revocation of the order of withdrawal of the indemnity lands on account of this grant which took effect August 15, 1887. Selection was, however, made on October 3, 1887. Upon an application to enter said land filed by Crawford, in which settlement was alleged prior to the selection of October 3, 1887, hearing was had, resulting in a decision of the local officers in favor of Crawford, it being found that he had settled upon the land in July, 1887, and that he was residing thereon and claiming the same at the date of the revocation of the indemnity withdrawal, namely, August 15, 1887.

Your office decision held that such settlement was a bar to the subsequent selection by the company which was held for cancellation with a view of allowing Crawford's application as before stated. From said decision the company appealed, but it now appears upon inquiry at your office that since the filing of said appeal, to wit, on November 5, 1892, the land was patented on account of said grant. By the issue of said patent the land has passed beyond the jurisdiction of this department, and while under the rulings your decision is a proper one, and should be affirmed, yet it will be necessary that the company reconvey the land upon demand or that the patent be set aside by the courts, before Crawford can be permitted to make entry as applied for.

I have therefore to direct that you demand of the company a reconveyance of this land (the patent for which issued while the case under consideration was pending), under the provisons of the act of March 3, 1887 (24 Stat., 556), and, at the expiration of the time allowed under the statute within which to make reconveyance as demanded, that you report to this department the action taken, for such further action as may be warranted by the facts as then presented.

Herewith are returned the papers that the full record may be returned when reporting the result of the demand.

Very respectfully,

HOKE SMITH,

Secretary.

United States Landoffice.

Los Angeles, California, October 16th, 1890.

In the matter of the homestead application of Joseph Crawford for the N. W. ¼, sec. 17, T. 7 S., R. 3 E., S. B. M., rejected by the local office Oct. 14, 1890.

I hereby appoint F. Jordan of Los Angeles, California, to be my attorney to appeal in the above matter.

Witness my hand and seal, year and date first above written.

[Seal] JOSEPH CRAWFORD.

[Endorsed]: Joseph Crawford. Power of Atty. to F. Jordan. In re appeal Hd. Application conflict with S. P. R. R. Co. Filed Nov. 24, 1890. I. H. Polk, Receiver.

F. W. J. D. J. V. W.

Department of the Interior.

General Landoffice,

Washington, D. C., September 11, 1894.

C. P. Huntington, Esq., Prest. Southern Pac. R. R. Co.,
New York, N. Y.

Sir: Enclosed herewith find copy of departmental decision of August 18, 1894, in the case of the claim of Joseph Crawford vs. The Southern Pacific Railroad Company, involving the N. W. ¼ of sec. 17, T. 7 S., R. 3 E., Los Angeles district, California, in which it is shown that the said tract was erroneously patented to said company November 5, 1892; and, in accordance with the secretary's instructions, you, as president of said company, owning and controlling its land grant, are requested, under act of March 3, 1887, to reconvey the said tract to the United States within ninety days from receipt hereof; otherwise, suit will be instituted under said act to vacate the patent for the tract aforesaid.

Very respectfully,

S. W. LAMOREUX,
Commissioner.

[Endorsed]: U. S. vs. S. P. R. A9, Sec'ys Decision. Plaintiff's Exhibit A9. To deposition of Joseph Crawford, Los Angeles, Cal., Oct. 8th, 1896. H. S. Rollins, Notary Public.

[Endorsed]: Consolidated Nos. 587, 662, 675. In the United States Circuit Court, Ninth Circuit, Southern Dis-

trict of California. The United States, Complt., vs. Southern Pacific Railroad Co. et al., Defts. Deposition of Joseph Crawford.

Memo. of Costs.

Admr. Oath (1)	.25
Testimony, 27½ fol., @ 20 cents	5.50
Exhibits (9)	.90
Certificate	1.00
	$7.65

Opened and filed Mar. 29, 1899. Wm. M. Van Dyke, Clerk.

Wm. Herbert Smith,
Telephone No. 910.

In the Circuit Court of the United States, Ninth Circuit, Southern District of California.

THE UNITED STATES OF AMERICA, Plaintiffs, vs. SOUTHERN PACIFIC RAILROAD COMPANY et al. — Consolidated No. 675.

Report of William Herbert Smith, Esq., Special Examiner in Chancery.

Before Wm. Herbert Smith, Special Examiner and Stenographer.

For the United States of America, J. H. Call, Esq.
For the defendants, L. E. Payson, Esq.

WM. HERBERT SMITH,
Law Reporter, Columbia Law Building, 416 5th Street N. W., Washington, D. C.

At a stated term, to wit, the August term, A. D. 1896, of the Circuit Court of the United States of America, of the Ninth Judicial Circuit, in and for the Southern District of California, held at the courtroom in the city of Los Angeles, on Monday, the 5th day of October, in the year of our Lord one thousand eight hundred and ninety-six. Present: The Honorable OLIN WELLBORN, District Judge.

THE UNITED STATES OF AMERICA, Complainants, vs. THE SOUTHERN PACIFIC RAILROAD COMPANY et al., Defendants.	Nos. 675, 587, and 662. Consolidated.

Order Appointing Special Examiner.

Upon motion of Joseph H. Call, Esq., special assistant United States attorney, and good cause appearing therefor, and no objection being made by defendants, it is ordered that William Herbert Smith of Washington, District of Columbia, be, and he is hereby, appointed a spe-

cial examiner and stenographer of this court to take the testimony in said cause, said testimony, when so taken, to be transmitted to this Court in accordance with the rules of Court.

I, Wm. M. Van Dyke, clerk of the Circuit Court of the United States, for the Southern District of California, do hereby certify the foregoing to be a full, true, and correct copy of an original order made and entered by said Court, October 5th, 1896, in the cause entitled The United States of America, Complainants, vs. The Southern Pacific Railroad Company et al., Defendants, Nos. 675, 587, and 662, consolidated, and remaining of record therein.

Attest my hand and the seal of said Circuit Court, this 12th day of October, A. D. 1896.

[Seal] WM. M. VAN DYKE,
Clerk.

In the United States Circuit Court, for the Southern District of California, Ninth Circuit.

THE UNITED STATES,
Plaintiffs,
vs.
SOUTHERN PACIFIC RAILROAD COMPANY, D. O. MILLS and HOMER S. KING, Trustees, THE CENTRAL TRUST COMPANY OF NEW YORK, THE SOUTHERN PACIFIC COMPANY OF KENTUCKY, and THE COLORADO RIVER IRRIGATION COMPANY,
Defendants.

Consolidated Nos. 587, 675, 662.

Notice to Take Testimony.

To the defendants in the above-entitled cause, and to Walter J. Trask, Lewis E. Payson, William Singer, Junior, William F. Herrin, W. H. H. Hart, Page, McCutcheon & Eells and Butler, Notman, Joline & Mynderse, attorneys and counsel for said defendants:

You will please take notice that on the fourteenth day of November, A. D. 1896, at the hour of 10 o'clock A. M., the United States will take the testimony in said cause of the following-named witnesses: Colonel Barlow, Charles

Satterlee and others. Said testimony will be taken before William Herbert Smith, a special examiner and stenographer, duly appointed by said Court in this said cause in that behalf, and will be taken at the office of said William Herbert Smith, at No. 416 Fifth street northwest in the city of Washington, D. C., and the taking of such testimony will be continued from time to time and from place to place, as may be determined by said special examiner, until completed. You are requested to appear before said special examiner in the taking of such testimony and cross-examine the witnesses.

JOSEPH H. CALL,
Special Assistant United States Attorney and of Counsel for Complainants.

State of California,
County of Los Angeles. } ss.

Jesse F. Waterman, being first duly sworn, deposes and says: That on the fifth day of November, 1896, he served the foregoing and annexed notice to take testimony upon the defendants therein named and upon their attorney and solicitors, as follows: That on said date above-named he delivered a copy of said notice to the above-named Walter J. Trask, an attorney of record in said cause for the said defendants, at the office of said Trask, in the city of Los Angeles, California, and also by filing a duplicate original of said notice to take testimony in the office of the clerk of the United States Circuit Court for the Southern District of California.

Affiant further states that each of the above-named defendants and each of their attorneys and solicitors above-named, except said Trask, is a nonresident of the Southern District of California, and said attorneys, and neither of them, has designated any person or place upon whom or where service of notices may be had for taking testimony, or other proceedings in said cause, as required by the rules of said United States Circuit Court for said district. Affiant further states that the rules of said court provide that where any party in any cause in said court is a nonresident of said district and appears by an attorney, who is also a nonresident of said district, who does not designate a place within the city of Los Angeles where notices are to be served on him, that a filing of any notice or paper in the case in the clerk's office, with the papers in the case, shall be sufficient service. Affiant further states that in pursuance of said rules of said court he served the parties in said cause and their solicitors, other than said Walter J. Trask, in conformity with said rule as aforesaid.

JESSE F. WATERMAN.

Subscribed and sworn to before me this 5th day of November, 1896.

[Seal] GEORGE L. KEEFER,

Notary Public for Los Angeles County, California.

[Endorsed]: Nos. 587, 675, 662. In the U. S. Circuit Court, Ninth Circuit, Southern District of Cal. United States vs. Southern Pacific Railroad Co. et al. Notice to take testimony. Joseph H. Call, Atty. for Plaintiffs.

In the Circuit Court of the United States, Southern District of California, Ninth Circuit.

No. 675.

THE UNITED STATES OF AMERICA,

vs.

THE SOUTHERN PACIFIC RAILROAD COMPANY, D. O. MILLS and GERRIT L. LANSING, Trustees, and THE CENTRAL TRUST COMPANY OF NEW YORK, THE SOUTHERN PACIFIC COMPANY OF KENTUCKY, THE COLORADO RIVER IRRIGATION COMPANY.

No. 587.

THE UNITED STATES OF AMERICA,

vs.

THE SOUTHERN PACIFIC RAILROAD COMPANY, D. O. MILLS and GERRIT L. LANSING, Trustees, and THE CENTRAL TRUST COMPANY OF NEW YORK, THE SOUTHERN PACIFIC COMPANY OF KENTUCKY, THE COLORADO RIVER IRRIGATION COMPANY.

No. 662.

THE UNITED STATES OF AMERICA,

vs.

SOUTHERN PACIFIC RAILROAD COMPANY.

Order of Special Examiner Fixing Time for Taking Testimony.

Washington, D. C., November 4th, 1896.

I, William Herbert Smith, special examiner in chancery in the cases of the United States of America against

the Southern Pacific Railroad Company and others, now depending in the United States Circuit Court for the Southern District of California, in pursuance of the annexed copy of the order of said Court appointing me as the special examiner to take testimony in said cause, do hereby certify that, on the above date, Mr. Joseph H. Call, special assistant United States attorney, appeared before me at my office, No. 416 Fifth street northwest, in the city of Washington and District of Columbia; and in pursuance of his application, it is hereby ordered that the taking of the testimony in said cause shall commence before me at my office, No. 416 Fifth street northwest, in said city of Washington and District of Columbia, on the 14th day of November, A. D. 1896, at 10 o'clock A. M., and shall continue thereafter at such time and places as may be determined by the undersigned.

And it is further ordered that notice be given to the defendants in said suit, or to their counsel, of the time and place for the taking of said testimony, which notice shall be given in conformity with the rules of the United States Circuit Court for the Southern District of California.

Witness my hand this 4th day of November, A. D. 1896.

WM. HERBERT SMITH,
Special Examiner.

United States Circuit Court, Ninth Circuit, Southern District of California.

THE UNITED STATES OF AMERICA,

Plaintiffs,

vs.

THE SOUTHERN PACIFIC RAILROAD CO et al.,

Defendants.

Consolidated Nos. 587, 662, 675.

Order Setting Time for Hearing.

In pursuance of the foregoing order requiring service to be made upon the defendants for taking the testimony herein, and in pursuance of the annexed order of the Court, appointing the undersigned stenographer and special examiner to take the testimony in said consolidated case, and in pursuance of the annexed notice to take said testimony served upon the defendants, or their attorneys, on the 14th of November, 1896, at the hour of ten o'clock at the office of the undersigned, William Herbert Smith, No. 416 Fifth street, in the city of Washington, District of Columbia, there appeared before me Mr. Joseph H. Call, special assistant United States attorney, and upon the application of said Joseph H. Call, and by consent of counsel heretofore given, it is ordered that the hearing in the matter of taking said testimony be adjourned to the Astor House, in the city of New York and State of New York, to be resumed at the hour of ten o'clock A. M. on Tuesday, the 17th day of November, A. D. 1896.

In the United States Circuit Court, Ninth Circuit, Southern District of California.

UNITED STATES OF AMERICA,
Plaintiffs,
vs.
THE SOUTHERN PACIFIC RAILROAD COMPANY et al.,
Defendants.

Consolidated Nos. 587, 675, 662.

Deposition of Charles E. Satterlee.

New York City, New York, November 17, 1896,
10 o'clock A. M.

Met pursuant to adjournment in the city of New York and State of New York, at the Astor House, when were present Joseph H. Call, special assistant United States attorney, on behalf of the United States, and Lewis E. Payson, on behalf of the defendants.

Whereupon, the taking of testimony in the above-entitled cause was adjourned until 11 o'clock A. M. on the same day, at the office of Charles E. Satterlee, in the Western Union Telegraph Company Building, city of New York and State of New York.

New York City, New York, November 17, 1896,
11 o'clock A. M.

Met pursuant to the foregoing adjournment at the office of Charles E. Satterlee in the Western Union Telegraph Company Building, in the city of New York and State of

New York; whereupon the taking of testimony in the above-entitled cause on behalf of the complainants was proceeded with, in pursuance of the annexed commission and notice, and by consent of the parties, before Wm. Herbert Smith, special examiner and stenographer; when were present Joseph H. Call, special assistant United States attorney for the United States, and Lewis E. Payson, for the defendants.

Whereupon CHARLES E. SATTERLEE, a witness of lawful age, called by and on behalf of the complainants, having been first duly sworn to testify the truth, the whole truth, and nothing but the truth, deposes as follows:

(By Mr. CALL.)

Q. 1. What is your full name?

A. Charles E. Satterlee.

Q. 2. You are the secretary of the Texas & Pacific Railway Company?

A. Yes, sir.

(It is agreed by and between counsel for the respective parties that the witness, Charles E. Satterlee, is the same witness by that name whose testimony has already been taken in this cause on behalf of the defendants.)

Q. 3. When your testimony was previously taken you produced a printed report, made by Gen. Dodge, the chief engineer of the company, and certain parts of it were offered in evidence by the defendants. Do you remember that?

A. I think I produced several written reports; but so far as the printed pamphlet or printed report is con-

cerned, I am under the impression that the bound volume of the report was produced by Gen. Dodge in his testimony.

Q. 4. You remember that there was produced, upon your examination, a printed report, and that a part of it was offered in evidence?

A. Yes, sir; a printed report from the chief engineer.

Q. 5. Can you now produce that report?

A. I presume so. It is among my records.

Q. 6. Have you not got the printed report here?

A. I have these books, and all of the various archives of the company here; and I suppose that after giving that testimony, I put everything away, so as not to be troubled with it.

Q. 7. Can you produce the printed report which Mr. Payson used in evidence on behalf of the defendants in your former examination?

A. I can produce a report; but whether it is that identical one or not, I do not pretend to say.

Q. 8. I will ask you to produce it.

A. I have one here. I produce one which I think was produced there, and which I obtained from Gen. Dodge afterward. (The witness produces the printed report.)

Q. 9. Have you any other copy of that printed report which you now have in your hands?

A. Not in this form. I may possibly have it in pamphlet.

Q. 10. From the same print?

A. Possibly, in pamphlet. You see, I have to rely upon my clerks in this matter.

Q. 11. You cannot find any other copy of that report?

A. I have here a report endorsed, "Report of Gen. G. M. Dodge, March 12, 1873."

Q. 12. You have there a written report of Gen. Dodge, made in 1873 to your company?

A. I have here a copy of it.

(By Mr. PAYSON.)

Q. Or what purports to be a copy?

A. What purports to be a copy of a report by Gen. G. M. Dodge of March 12, 1873, upon "The Surveys from San Diego, with a view of determining route for adoption." You see, it is not signed by him. It is a copy.

(By Mr. CALL.)

Q. 13. Have you any other copy of the printed report of 1874 than the one before you?

A. So far as my knowledge goes, I have not. As far as I remember, that copy was used in the testimony, and I afterward retained it in my possession, with the consent of Gen. Dodge.

Q. 14. How long have you been secretary of the Texas & Pacific Railway Company?

A. Since the year 1875.

Q. 15. Have you, as secretary, the records and archives of the company in your possession?

A. Yes, sir.

Q. 16. Have you any of the maps showing the routes and lines of the Texas & Pacific Railway Company, or any of them, referred to in the report of Gen. Dodge of 1874?

A. I do not think I have; but I will have to read the report, and then make a search, in order to find that out.

Q. 17. Gen. Dodge refers in this printed report to accompanying profiles and maps of the line of the Texas & Pacific Railway between the Colorado river and San Diego, by way of San Gorgonio Pass. Have you any of those maps?

A. I think not; but I cannot say positively.

Q. 18. I will thank you to examine your records and papers and see if you have any such maps or profiles in your possession?

A. The ones referred to in this report?

Q. 19. Yes. You now produce a written report of Gen. G. M. Dodge, chief engineer of the company, being his annual report, made May 10, 1873?

(By Mr. PAYSON.)

Q. State whether that is the original, or purports to be a copy.

A. This is a copy. It is signed: "Gen. G. M. Dodge, chief engineer."

(By Mr. CALL.)

Q. 20. Have you the original of that report?

A. No, sir. At the head of this report you will see: "California and Texas Railway Construction Company. Office of the chief engineer, Marshall, Texas, May 10th, 1873." It is addressed to Col. Thomas A. Scott, president Texas & Pacific Railway Company—I give you this as a piece of information; at that time the California and Texas Railway Construction Company were building the Texas & Pacific under contract, in the same way that the

Union Pacific was built. Gen. Dodge was conducting that construction for the California and Texas Railway Construction Company, and was also, either at that time or afterward, made chief engineer of the Texas & Pacific Raiway Company. Of course many of the details as to the construction were among the archives of that company. Where they are now, I do not know, nor do I know whether they exist at all. That company was wound up and reduced to a simple charter, and nothing more.

(By Mr. PAYSON.)

Q. As a preliminary question, let me ask you to state whether the paper which you hold in your hand, and which you say purports to be a copy of a written report of Gen. Dodge, is or purports to be a report from Gen. Dodge, as an officer of the California and Texas Construction Company to the Texas & Pacific Company.

A. It so appears upon its face.

Mr. PAYSON.—Counsel for the defendants objects to this paper, for two reasons: First, because it only purports to be a copy of a document; and secondly, for the reason that it is a report from an officer of another and different corporation than the Texas & Pacific Company, and is with reference to the affairs of the Construction Company, as testified by the witness.

(By Mr. CALL.)

Q. 21. Gen. Dodge also represented the construction company?

A. Yes, sir; that is, as its chief engineer.

Q. 22. And also was chief engineer of the Texas & Pacific Railway Company?

A. That is a matter covered in the previous testimony, I believe. To answer that question, I would have to look back at the record, and ascertain when he was elected chief engineer. Presumably he was; but I will have to refer to the record to answer the question positively.

Q. 23. There was some road constructed in California by the Texas and Pacific Company under that contract, was there not? A. Under what contract?

Q. 24. Through the construction company?

A. No, sir; there was no road constructed in California. There was a survey made, but no road constructed.

Q. 25. There was grading done?

A. Not to my knowledge.

Q. 26. There was ten miles of road graded, was there not? A. I do not know anything about that.

Mr. CALL.—I now offer in evidence, from the document produced by the witness, the following portions:

The endorsement on the back, as follows:

"Annual Report of Gen. G. M. Dodge, Chief Engineer, May 10, 1873.

California & Texas Ry. C. Co.,

Office of Chief Engineer,

Marshall, Texas, May 10, 1873,

Col. Thomas A. Scott, President T. & P. Ry. Co.

Dear Sir: .....(Page 1.)

I submit herewith a preliminary statement setting forth briefly the condition of affairs upon the line from Shreveport to San Diego. . . . .

(Page 17.) The California Division extends from the Pimas villages to San Diego, following the Gila river to Fort Yuma, cutting off the great bend of the Gila, by a direct natural route wth easy grades and light work; thence by the adopted line from Fort Yuma, crosses the desert along the eastern base of Sierra Nevada through the San Gorgonio Pass, across San Jacinto plain to Temecula, striking the ocean at the mouth of Rio San Louis; thence down the coast to San Diego.

It is possible that examinations may make it desirable to cross the Gila just below the great bend pass, to the north of that river, on a direct line to and crossing the Colorado river about thirty miles north of Fort Yuma, connecting with the adopted line about latitude 33 degrees.

The different surveys made by Mr. Evans crossing the Sierra Nevada range, which are fully set forth in the preliminary report hereto attached, demonstrate that this line, in an engineering and commercial point of view, is far superior to any other. It crosses the Sierra Nevada, the great obstacle heretofore considered as rendering the southern line to the Pacific, if not impracticable, at least, very costly, with a maximum grade of 105 feet, with an average work on the entire division not much heavier than that encountered in Texas or New Mexico. The estimates for this division make the cost of a fully equipped road at less than $30,000 per mile. There is no other line crossing these mountains either to the north or south of us, nor can there be any other obtained, that will compare with it in grades, curvature,

or cost. In fact, it is one hundred per cent better than any of the lines now built or projected over these mountains. It increases the distance over the direct line to San Diego about sixty-nine miles, but decreases the distance to San Francisco over the direct line about one hundred miles. . . . .

I am, respectfully,

Your obedient servant,

(Signed) G. M. DODGE,

Chief Engr."

(By Mr. CALL.)

Q. 27. You say, Mr. Satterlee, that you have not among your archives the original of that report?

A. This may be a copy of it. (Producing a paper.) You will have to compare it to see whether or not it is a copy. My clerk has just brought it to me.

Q. 28. Is the document which you produce an original or a copy?

A. It appears to bear the original signature of Gen. G. M. Dodge.

Q. 29. You are acquainted with his signature?

A. Tolerably well.

Mr. CALL.—I now offer in evidence, without repeating it, the same parts of the original which I have already offered from the copy.

Q. 30. You have produced here a document entitled on the back: "Report of Gen. G. M. Dodge, March 12, 1873, upon surveys from San Diego, with a view of determining the route for adoption." Is that an original or a copy of an original report?

A. That is a copy.

Q. 31. Have you got the original of that report?

A. Not to my knowledge.

Q. 32. You have looked through your papers to see whether or not you have got the original of that report?

A. I have not personally looked through them, but my clerk has looked through them.

Q. 33. You are satisfied that you have not got it?

A. I am quite satisfied that I have not.

(By Mr. PAYSON.)

Q. You have no personal knowledge as to whether this paper is a copy of any other paper or not; you simply know that it is not an original?

A. Yes, sir.

Q. That is as far as you go? A. That is all.

(By Mr. CALL.)

Q. 34. But you find it among the papers and records of the company?

A. I find it in the archives of the company.

Mr. PAYSON.—I object to the paper, because no sufficient foundation has been laid for the introduction of this copy in lieu of the original.

Mr. CALL.—I offer in evidence from the document referred to, endorsed upon the back, "Report of Gen. Dodge, March 12, 1873, upon the surveys from San Diego, with a view of determining the route for adoption," as follows (p. 1):

"Office of the Chief Engineer,

Marshall, Texas, March 12, 1873.

Hon. Thomas A. Scott, President.

Dear Sir: I have the honor to submit a preliminary report upon the surveys on the California Division between San Diego and Colorado river, with a view of determining the route for adoption over that division. The full report of all the surveys, with maps, profiles, etc., will be made up by Mr. Evans hereafter, but from data forwarded to me by him I am able to place before the board sufficient information for them to determine upon the general route from San Diego east.

The lines examined are as follows:

The direct line from San Diego to Ft. Yuma, known as the Otay valley line, 203.11 miles long.

The San Gorgonio Pass lines, numbered 1 to 4, marked main line and A, B, C, D, on maps.

No. 1. Main line, 313 miles long.

No. 2. The coast line via Temecula creek, to the main line, thence by main line to the pass, 308.73 miles.

No. 3. The coast line to Temecula; thence the main line to La Laguna, thence up the San Jacinto river to San Bernardino, 302 miles.

No. 4. The coast line, thence Temecula creek, thence line "D," direct to San Gorgonio Pass, 270 miles. . . . .

(Page 4.)

No. 4. The next line, known as the coast line, and numbered 4, follows the coast from San Diego to the mouth of Temecula creek, thence up Temecula creek to

Temecula, thence by line "D" direct to San Gorgonio Pass.

This line is the shortest of the San Gorgonio Pass lines, and, as I calculate, the cost is the cheapest, though Mr. Evans makes the construction of it proper cost a little more than line 3.

This line is the proper line to adopt from San Diego to Temecula, provided the San Gorgonio Pass route is taken. From Temecula to the San Gorgonio Pass, we have examined four lines, and the examination reduces us to the choice of the two. . . . .

(Page 18.)

I would therefore recommend to the company that, for the present, they determine between the two general routes, the direct line and the San Gorgonio Pass line; if the San Gorgonio Pass line is determined, we can locate that line up the coast to Temecula, and for the present the decision of the line between Temecula and San Gorgonio Pass be postponed, and hereafter decided, as matters may develop in California.

* * * * * * * * * * *

I have instructed my engineers to commence location upon this line, awaiting the decision of the company, but with a full understanding that it is not under any circumstances to be considered the adopted line. If the company does not desire to make known their determination in this matter for the present, I will locate it to Temecula, and wait for further instructions. If no instructions are given me, I shall consider that my instructions to the engineers meet the approval of the board.

I enclose herewith tracing showing the San Gorgonio Pass lines; also a map showing all the lines.

I am, Vy resp.,

G. M. DODGE,

Chief Engr."

Mr. PAYSON.—All of these extracts from the paper purporting to be a copy of a report are objected to by the defendants for the reasons above stated.

(By Mr. CALL.)

Q. 35. Do you find another copy of the printed report of Gen. Dodge of 1874? A. No, sir.

Q. 36. Have you an extra copy of any of these reports in pamphlet?

A. Perhaps I have; but they are precious now, and we have none whatever to spare. I have repeated inquiries for them, and have to refuse them in every instance. I have had them bound in this way just to preserve them. I have had them bound in this way just to preserve them. Of course I have an abundance of the later ones, during the last few years.

Mr. CALL.—I offer in evidence from the fourth annual report of the board of directors of the Texas & Pacific Railway Company to the stockholders, August 10, 1875, on page 30, as follows:

"The following tables will show the general elevation above the sea from the Red river to San Diego, and also the gradients, ascending and descending, and comparative with the Union and Central Pacific line, from which it will be seen that the extreme elevation upon the line

is 5,027 feet, against 8,235 feet upon the Union Pacific, and 6,988 upon the Central Pacific road; the total ascent being but 38,245 feet, against 54,812 feet on the line of the Union and Central Pacific. The natural result of this lower altitude is that your line is free from obstruction by snow at all seasons of the year, and forms a natural highway across the continent—the shortest that can be constructed in United States territory between the two oceans.

Table of Elevations.

	Above Tide Water.
Shreveport	204 feet
Tucson	1,898 feet
Pima villages	1,193 feet
Fort Yuma	145 feet
Divide between Gila and Colorado desert	437 feet
Salt Lake dry in Colorado—below tide water	290 feet
Cabazon Valley	998 feet
San Gorgonio Pass	2,621 feet
San Marguerita branch	104 feet
San Diego on the Pacific	
Total distance from Marshall, Texas, to San Diego, California	1,636 miles

Signed (p. 37) by order of the board of directors.

THOMAS A. SCOTT,

President.

Philadelphia, August , 1875."

Mr. CALL.—I also offer in evidence the tables of grades referred to on pages 32, 33 and 34 of the said report of 1875, and I reques the special examiner to make copies thereof, and to compare the extracts that have been offered with the originals.

(The said tables are in the words and figures following):

TABLE OF GRADES Texas and Pacific Railway

West of Fort Worth.				Miles	Miles ascending West. Grade per mile in feet. 0 to 20	20 to 40	40 to 60	60 to 66	66 to 80	80 to 100	100 to 105	Level
Mile	1	to	100	100	3.56	15.36	13.79	9.80				26.28
"	100	"	200	100	16.51	13.48	10.38	12.99				25.40
"	200	"	300	100	11.27	15.92	10.54	10.15	3.22	1.14		16.09
"	300	"	400	100	24.15	11.87	6.08	0.38	.38			12.76
"	400	"	500	100	18.19	26.57	9.39	1.34	1.34	3.46		9.51
"	500	"	600	100	6.78	22.45	10.20	5.02		2.18		17.05
"	600	"	700	100	28.92	15.58	5.65	5.40		.61		16.06
"	700	"	800	100	20.16	10.76	7.18					15.86
"	800	"	900	100	6.83	10.07	17.78	2.53	5.55			7.82
"	900	"	1000	100	3.32	0.72	0.38		.38			8.17
"	1000	"	1100	100	11.27	9.02	3.13					17.25
"	1100	"	1187.29	87.29	4.42	1.36	2.20					27.01
"	1187.29	"	1457.64	270.34	68.26	32.27	10.20		7.73	3.96	9.83	41.02
			Total West of Fort Worth	1457.63	218.59	185.43	106.90	47.61	18.60	11.35	9.83	239.84
	East of Fort Worth											
Shreveport	to	State Line		19.37	1.12	2.29	4.34	.28	.27			4.62
State Line	to	Longview		44.18	1.48	3.26	5.32	2.35	4.22	.82		8.86
Longview	to	Dallas		124.50	6.64	12.97	12.92	18.23	.50			27.34
Dallas	to	Fort Worth		30.81	.95	3.27	2.73	5.77				9.12
Marshall	to	Junction		69.04	4.60	4.33	5.13	1.80	13.44			10.47
Texarkana	to	Paris		90.98	12.11	8.99	11.04	12.48				12.02
Paris	to	Fort Worth		145.13	8.21	11.36	10.69	27.38				28.11
			Total East of Fort Worth	524.01	35.01	46.47	52.17	68.29	18.43	0.82		100.54
			Total Line	1,981.64	253.60	231.90	159.07	115.90	37.03	12.17	9.83	340.38

TABLE OF GRADES. Texas and Pacific Railway,- continued.

West of Fort Worth	Miles	miles descending West. Grade per mile in feet							Ascent feet	Descent feet	Longest Maximum grade		Longest Maximum Grade Stations		
		0 to 20	20 to 40	40 to 60	60 to 66	66 to 80	80 to 100	100 to 105			Ascending	Descending	Ascending	Descending	
Mile- 1 to 100.	100.	4.18	8.25	15.63	3.17	----	---	---	1,715.94	1,286.00	66.00	66.00	39	40	
" 100 to 200.	100.	.80	6.55	8.36	10.53	----	---	---	1,901.52	1,469.90	66.00	66.00	151	130	
" 200 to 300.	100.	11.25	7.14	7.78	5.50	----	---	---	2,161.35	1,351.18	79.00	66.00	14	88	
" 300 to 400.	100.	26.49	14.13	2.19	1.62	.95	---	---	947.18	1,065.24	80.00	80.00	20	50	
" 400 to 500.	100.	7.21	10.66	8.53	1.14	95	0.95	.76	2,126.80	1,091.00	96.00	110.00	70	40	
" 500 to 600.	100.	8.05	12.51	4.98	1.68	4.22	4.81	---	1,634.57	1,655.50	95.00	95.00	78	80	
" 600 to 700.	100.	12.88	12.78	1.41	.18	.53	----	---	1,386.18	483.95	79.00	79.00	32	11	
" 700 to 800.	100.	13.91	11.44	15.84	1.26	4.09	----	---	870.76	1,586.86	60.00	80.00	80	56	
" 800 to 900.	100.	5.43	9.29	17.07	12.26	5.37	----	---	2,005.77	2,531.06	80.00	80.00	24	69	
" 900 to 1000.	100.	54.67	17.85	11.93	2.21	.36	----	---	384.66	1,957.22	80.00	80.00	30	130	
" 1000 to 1100.	100.	36.82	3.92	15.28	2.22	1.14	----	---	531.00	1,371.96	52.80	80.00	25	60	
" 1100 to 1187.29	87.29	46.49	3.96	1.28	.....	.....	.57	---	164.32	455.41	52.80	80.00	54	30	
" 1187.29 " 1457.64	270.34	43.65	20.30	13.85	.....	.....	8.31	6.34	3,995.90	4,138.70	5.00	105.00	----	----	
Total West of Fort Worth	1457.63	270.80	138.78	119.13	51.39	17.61	14.64	7.10	19,825.95	20443.98	------	------	--------	--------	
East of Fort Worth													Curvature	Curvature miles	Tangent miles
Shreveport to State Line	19.37	0.51	3.12	1.74	1.01	....	0.17	---	271.00	336.00	80	92			
State Line to Longview	44.18	1.15	4.83	7.15	0.50	2.88	1.36	----	981.22	903.94	94	100	137°16'	2.96	16.41
Longview to Dallas	124.50	6.86	9.28	10.11	19.14	0.51	....	....	2,257.45	2,165.45	80	80			
Dallas to Fort Worth	30.81	2.22	0.15	0.63	5.9;	....	....	....	617.50	443.50	66	66			
Marshall to Junction	69.04	4.88	4.45	4.95	1.33	13.66	....	....	1,515.40	1,523.20	80	80			
Texarkana to Paris	90.98	6.79	6.90	11.28	9.37	....	....	....	1,760.00	1,470.00	66	66			
Paris to Fort Worth	145.13	11.25	8.24	17.08	22.86	....	....	....	2,766.22	2,724.39	66	66			
Total East of Fort Worth	524.01	83.66	36.97	52.89	60.18	17.05	1.53	7.10	10,168.79	9.566.48	----	----	----	----	----
Total Line	1981.64	304.49	175.75	172.02	111.57	34.66	16.17	-----	29.994.74	30,010.46	----	----	----	----	----

COMPARISON. -- Union and Central Pacific, and Texas and Pacific Grades.

Union and Central Pacific	Miles	Texas and Pacific	miles	Difference in favor of Texas and Pacific Railway	miles
Between 66 @ 90 feet per mile	199.95	Between 66 @ 90 feet per mile	120.82	Between 66 @ 90 feet per mile	79.13
" 90 @ 105 " "	29.45	" 90 @ 105 " "	7.10	" 90 @ 105 " "	22.35
" 105 @ 116 " "	29.45	" 105 @ 116 " "		" 105 @ 116 " "	29.45

ELEVATIONS OF SUMMITS

Union and Central Pacific		Texas and Pacific		Difference in favor of Texas and Pacific Railway.
Summits	Feet	Summits	Feet	Feet
Evans' Pass, Summit of Rocky Mountains,	8235	Hurds' Pass. Guadeloupe Mountains	4419	3816
Dodges' Summit, Divide of Continent.	7100	Divide of Continent.	4893	2207
Rim of Basin, Wasatch Mountains	7546	Nugents' Pass	4709	2837
Salt Lake Basin	4200			
Promontory	4961			
Pegem's Pass.	6180			
Trana Pass	6100			
Donner Pass, Sierra Nevada Mountains	6988	San Gorgonio Pass, Sierra Nevada Mountains	2621	4867

DISTANCES

Route.	From	To	R. R. Line	Air Line	Distance Lost
Union and Central Pacific	San Francisco.	Omaha	1907 miles	1380 Miles	527 Miles
Texas and Pacific	Shreveport	San Francisco	2039 "	1650 "	489 "
" "	"	San Diego	1676 "	1325 "	351 "

I also offer in evidence from the printed report, entitled "Texas and Pacific Railway Company, Report of Gen. G. M. Dodge, Chief Engineer, 1874," the title and pages 3 to 12, inclusive, down to the words "in addition to the main line from Shreveport to San Diego," as follows:

TEXAS AND PACIFIC RAILWAY COMPANY.

Report

of

Gen. G. M. Dodge,

Chief Engineer.

1874.

New York.

Geo. W. Wheat, Fine Mercantile Printer,

109 Nassau Street,

1880.

(Printed page 3.)

Report

of

Gen. G. M. Dodge,
Chief Engineer,
Texas and Pacific Railway Company.

Chief Engineer's Office,
Marshall, Texas, May, 1874.

Col. Thomas A. Scott, President Texas and Pacific Railway.

Sir: The charter of the Texas and Pacific Railway Company, as granted by the United States, provides for the construction of a continuous railroad and telegraph line from Shreveport, Louisiana, by Marshall, Harrison county, Texas; thence by the most direct and eligible route to be determined by the company, near the thirty-second parallel of north latitude, to a point at or near El Paso; thence by the most direct and eligible route, to be selected by said company, through New Mexico and Arizona to a point on the Rio Colorado, at or near the southeastern boundary of the State of California; thence by the most direct and eligible route to San Diego, California, to Ship's Channel, in the State of California, pursuing in the location thereof, as near as may be practicable, the thirty-second parallel of north latitude.

(Printed page 4.)

This charter also provides for the construction of a railroad from Fort Yuma to San Francisco, not limiting us from taking the most economical advantages of the topography of the country in leaving our main line.

It requires that one hundred miles each year shall be completed from its eastern terminus, and ten miles from its western terminus by May, 1874, and after that twenty-five miles per year from its western terminus, until the two lines meet. The rate at which the line is to built from its eastern end is materially modified by its charter in Texas, which is more fully explained in a subsequent part of this report.

As far as possible, we consider the question connected with the construction of the road, as follows:

First.—Location of lines.

Second.—Connections.

Third.—Water supply.

Fourth.—Timber.

Fifth.—Fuel.

Sixth.—Ballast.

Seventh.—Building stone.

Eighth.—Agricultural resources.

Ninth.—Mineral resources.

Tenth.—Land and town lots.

Eleventh.—Earnings.

Twelfth.—Commercial and military value.

You will also find, in a condensed form, estimates of cost of construction and equipments; table of grades, summits and distances, and comparison with other transcontinental lines. Annexed will be found reports of engineers in charge of the different divisions, with copies of the instructions under which they acted:

Divisions.

For Surveys and Construction.—The whole line was divided into five divisions:

1. Construction East of Fort Worth.—In charge of Capt. R. S. Hayes.

2. Brazos division. From Fort Worth to a point a little (printed page 5) west of the one hundredth meridian and south of Double mountain. In charge of Messrs. Hodges, Wilson and O'Neill.

3. The Pecos division.—From the Brazos division to Fort Bliss, or El Paso, on the Rio Grande, in charge, first, of Mr. E. D. Muhlenburg, and finally in charge of Maj. M. F. Hurd.

4. New Mexico division.—From the Rio Grande to the Pima villages, on the Rio Gila, in charge of Mr. George Wolcott.

5. California division. From the Pima villages to San Diego, California, in charge of Mr. J. A. Evans.

Extent of Surveys.

To develop the country in detail on or in the vicinity of the thirty-second parallel of latitude, a belt of country 200 miles wide and 1900 miles long was thoroughly explored, 10,000 miles of instrumental line run, and 15,000 miles of reconnoissance made, from July 1st, 1872, to January 1st, 1874, at a cost of $500,000.

For the detailed information as to the line, I refer you to the report attached hereto.

Road in Texas.

In the State of Texas, three divisions of the Texas and Pacific Railway have been placed under construction:

1. Southern division, Shreveport to Fort Worth, 219 miles.

2. Transcontinental division, Texarkana to Fort Worth, 236 miles.

3. Jefferson division, Marshall to Texarkana, 69 miles.

Texas Charter.

The charter granted by the State of Texas requires the completion of the road:

1. From Marshall to Texarkana, its junction with the St. Louis, Iron mountain and Southern Railway, by January 1st, 1874.

(Printed page 6.)

2. From Texarkana to Sherman, Transcontinental division, and from Longview to Fort Worth, on Southern division, by July 1st, 1874.

3. From Sherman to Fort Worth, Transcontinental division, by January 1st, 1875.

In July, 1872, when the present company entered upon the work, the road was in operation from Shreveport to Longview, a distance of 66 miles.

The company not only intended to build a railroad to the Pacific, developing the country adjacent to the thirty-second parallel of latitude, but to construct its eastern divisions—that is, two lines diverging from Fort Worth to the east. It would connect the Pacific coast and the territories through which the line passed with the manufacturing and commercial centers of the north, east and south, by the shortest, most direct and practicable route.

By them we reached St. Louis from Fort Worth, via the Transcontinental division and the St. Louis, Iron mountain and Southern Railway, in 745 miles; Chicago by same route, to Poplar Bluff; thence by Cairo and Illinois Central Railroad, in 998½ miles. To New York, via Sherman, Texarkana, Little Rock, Memphis, Louisville, Cincinnati, and Pittsburgh, 1756 miles, or to New York via Shreveport and North Louisiana Railway to Vicksburg, and thence by Central Southern lines to New York, 1653 miles. By same route to Richmond, Virginia, 1386 miles,

and to Washington, D. C., 1468 miles. To Galveston by Dallas and the Texas Central Railroad, 345 miles, or via Minneola and the Great Northern Railroad, 399 miles, and to New Orleans, by Shreveport and Red river, or via Shreveport, Vicksburg and Mississippi river, or via contemplated route through Louisiana, Marshall, Donaldsonville and Vermillion.

The Jefferson division, from Marshall to Texarkana, with its connections, also gives a direct route from Galveston, Houston, San Antonio, Austin and southeastern Texas, via the International and Great Northern, to the north and northwest, distance from Galveston to St. Louis, 875 miles.

In addition to these advantages, the three divisions, forming the three sides of a triangle, with its least angle at Fort Worth, develops the richest and best settled portions of north Texas, a country heretofore without transportation facilities, but (printed page 7) abounding in everything required for a numerous and wealthy population.

Construction.

The original charter from the State of Texas required that we should complete the whole road to Fort Worth by January 1st, 1874, and the efforts upon the part of the company to comply with the charter, and complete over 500 miles of road within one year, required an enormous expenditure of money.

The three divisions east of Fort Worth, 525 miles, was estimated to cost $12,363,129, and was under charge of Capt. R. S. Hayes, as engineer in charge of construction,

Mr. J. M. Eddy, assistant superintendent, being in charge of transportation, supplies, and material.

The report of Capt. Hayes is herewith submitted, giving full details of the work from August, 1872, to February 1st, 1874.

Completed Road.

Southern division, Longview to Dallas, 124 miles.

Jefferson division, Marshall to Texarkana, 74 miles.

Transcontinental division, Sherman to Brookston, 58 miles.

256 miles have been completed and accepted by the State of Texas and by the United States as a first-class road, complying with all the requirements of the charter and laws of Texas, and with the acts of Congress.

107 miles additional have been graded, tied, and bridged, ready for the iron, and in addition to this, 66 miles of road have been partially rebuilt; ties, bridges, buildings, depots and tanks renewed, and the gauge changed from 5 feet 6 inches to 4 feet 8½ inches.

Over $9,000,000 have been disbursed in completing this work, without any loss to the company, and within the amount of the estimate first submitted, although they did not then contemplate the extraordinary outlays rendered necessary by the lack of navigation in Red river, or the delay of the completion of the connecting roads, the epizootic, and finally the yellow fever, which quarantined us for ninety days.

This large expenditure of money in so limited a time, forced upon us by the State legislature, rendered the undertaking a (printed page 8) difficult and serious one.

Up to the time of the financial panic, our organization and progress had assured us that we would be able to comply with the requirements of our charter.

Had we been in railroad communication with St. Louis and Galveston in the fall of 1872, as was promised, instead of the spring of 1873, or could we have relied upon the navigation of Red river, as we had a right to expect from the experience of former years, say from November, 1872, to March, 1873, our line would have been completed to Dallas and Sherman by January, 1874, and our construction well advanced from Dallas to Fort Worth. Notwithstanding these drawbacks, we built more railroad during the year than any other company in the United States.

The three divisions, as soon as completed, will earn at least $5,000 per mile per annum, and as the country fills up the earnings will gradually and permanently increase.

The eastern part of the State, through which the line runs, is heavily timbered with pine, oak, and cypress. The western portion is prairie. The local demand for lumber in the west, the return transportation of cattle, cotton, and grain east, and the passenger traffic over it in every direction, covering, as it does by its connections, the whole of the thickly settled portion of Texas, will give this part of the line, when completed and equipped, a very large, remunerative, and increasing trade. The completed road is a first-class, new railroad, substantial in all its parts, and fully equal to any of the roads of the western States.

The bridges, shops, water stations, and depot buildings

are ample and substantial, far exceeding its present wants. The equipment is new and from the best shops.

To complete it to Fort Worth, as required by law, it will be necessary to lay track, erect water stations and buildings on the graded, tied and bridged portion of the transcontinental division from Texarkana to Brookston, a distance of 94 miles, by July 1st, 1874, and the building of 27 miles of new line from Dallas to Fort Worth by July 1st, 1874; also the construction of the line from Sherman to Fort Worth by January 1st, 1875, distance 81 miles, and thereafter each year not less than 100 miles on the Texas end, and 25 miles on the California end of the line each year until completed across the continent.

(Printed page 9.)

There is now before the legislature of Texas a bill granting all roads one year's extension of time. Should it pass, it will add an additional year to the time above stated.

In the fall of 1873, in accordance with the law of the United States, work was commenced at San Diego, California, under the supervision of Mr. James A. Evans, division engineer, ten miles of work was let; at this time the grading, bridging, and tieing is nearly completed. This work is still progressing, and we hope within the next ninety days to have it ironed and equipped.

Nearly all of our arrangements, right of way matters, real estate, etc., at San Diego, have been satisfactorily settled, and work should be commenced as soon as practicable in the tunnel upon the next section of 35 miles. To work this tunnel economically, we should have at least twelve months in which to complete it.

Description of Adopted Line.

The Texas and Pacific Railway will extend from Shreveport, Louisiana, on Red river, to San Diego, California, with a branch from Marshall, Texas, to Texarkana, there connecting with the St. Louis, Iron mountain and Southern Railway, and from Texarkana through Paris and Sherman, connecting with the main line at Fort Worth.

Over this route the surveys have determined that in an engineering and commercial point of view, the line to be adopted is as follows:

Leaving Shreveport, the road runs almost due west through Caddo Parish, Louisiana, and through the counties of Harrison, Gregg, Upshur, Wood, Smith, Van Zandt, Kauffman, Dallas and Tarrant, in Texas, passing through the towns of Marshall, Hallville, Longview, Willow Springs, Glade Water, Hawkins, Minneola, Grand Saline, Willis Point, Elmo, Terrell, Forney, Mesquite and Dallas, to Fort Worth, at the junction of the West and Clear forks of Trinity river, in Tarrant county.

This line crosses the divide between Red river and Sabine river, and runs up the valley of the Sabine, crossing it in Van Zandt county, crossing the Trinity river at Dallas, following the west fork of the Trinity to Fort Worth, distance 219 miles.

(Printed page 10.)

Fort Worth to San Diego. Commencing at Fort Worth, the line follows the valley of the Clear fork of the Trinity in a southwesterly direction to the mouth of South fork, and up the valley of South fork to its head; passing

through Weatherford, the county seat of Parker county, and thence northwest, crossing the headwaters of numerous tributaries of the Brazos, passing into Palo Pinto county about four miles from the northeast corner. It then turns a little south of west and crosses the Brazos river near the mouth of Cedar creek, and follows up the valley of Veal's creek, and across the divide into the valley of the Clear fork of the Brazos, and then following the general course of the Clear fork to the southeast extremity of the big bend of the Clear fork, about four miles southeast of Fort Griffin; thence following up the valley of Trout creek to its head and down one of the tributaries of Clear fork, it crosses Clear fork about four miles south of the north line of Shackleford county; thence almost due west, crossing California creek on the west line of the same county, and following its valley to its head, and thence in a direct line southwest, on the divide between the waters of Clear and Double mountain forks of the Brazos to a point 18 miles south of the Double mountains, a distance of 210 miles.

From this point the line runs a little south of west, crossing the headwaters of the North fork of the Colorado, and between Muchaque and Solitaire mountains to Sulphur Springs—latitude 33.30, longitude, 101.45 W. on the east border of the Staked Plains, a distance of 75 miles—thence southwest, crossing the Staked Plains to the Rio Pecos, crossing this river about 15 miles above the mouth of Toyah creek, and 54 miles below the mouth of Delaware creek, 119 miles; thence a little south of west in a very direct line to the newly-discovered pass in

the Guadaloupe mountains, known as Hurd's Pass—latitude 32.30, longitude, 104.30 W.—62 miles. This pass is about 40 miles southeast of the Guadaloupe Pass; thence northwest and parallel to the Guadaloupe range, 48 miles, to a point in Salt Lake Valley, 25 miles southwest of Guadaloupe Pass; thence almost due west, crossing the Heuca mountains, through a low pass to Fort Bliss, on the Rio Grande.

(Printed page 11.)

From there the line follows up the valley of the Rio Grande for a distance of 38 miles to near the town of Mesilla, then turning almost due west ascends to the tablelands of the Sierra Madre, which is reached in a distance of 6 miles, and on the same course, crossing the high rolling prairie of the Sierra Madre, it passes through the Florida Pass, between Fort Cummings and the Florida mountains, into the valley of the Miembres, crossing that river about 12 miles south of Ojo de Vaca (Cow Springs), and about 35 miles south of Fort Bayard, Silver City and the Lone mountain mining district.

We leave the Burro mountains on the north, the Pyramid range on the south, and passing near the Ralston silver mines we reach the valley of Playas, 125 miles west from the Rio Grande. After crossing this valley, we pass the Peloncillo, or Stein's Peak range, through a low gap about 6 miles south of Stein's Peak and the old Boundary Commission road. The line then crosses the San Simon valley in a direct course for Railroad pass, in the Chiricahin mountains, thence southwest across the valley of Payas de los Pimos, and across the Caliuro mountains

by way of Nugent's Pass, which is north of and about 10 miles from Dragoon Pass; thence to the valley of the San Pedro, near the settlement of Tres Alamos; thence south and up the San Pedro about 5 miles; thence west to the Cunega Pass, between the Whetstone mountains on the south and the Santa Catalina mountains on the north, and 20 miles north of Fort Buchanan summit, which is the highest point between the San Pedro and the Gila; thence northwest, down the valley of the Cunega and Rillito, to near the town of Tucson, following down the valley of Santa Cruz, keeping near the old stage route via the Point of Mountains to near Desert station. Then leaving the valley of Santa Cruz, and passing north of the Picacho mountain, we again strike the valley near Picacho station, and follow it about 20 miles; thence through a valley to the Gila near Sacaton, and about 60 miles below the mouth of the San Pedro, and down the valley of the Gila, 12 miles to the Pima villages, and following the Gila to its junction with the Colorado of the West at Fort Yuma, cutting off the great bend of the Gila by a direct natural route through St. Valentine's Pass. From there the line runs in a northwesterly direction, passing to the north of the sand (printed page 12) hills and across the Salt Lake district of the Colorado desert of California, over which our line for 45 miles is below sea level, the lowest point being 290 feet below tide water. In crossing this the line passes on the north margin of the Salt Lake of the Colorado desert; leaving the mud volcanoes about 5 miles to the south, and the Dos Palmos stage station about the same distance to the

north, we reach the Cabazon Valley 113 miles from Fort Yuma; thence on nearly the same course, 50 miles to the summit of San Gorgonio Pass, running 1¼ miles south of White Water stage station, and one mile south of Devontine's ranch, reaching the summit 2½ miles south of Edgar's ranch. This pass is 2621 feet above tide water, and its small elevation must be considered remarkable as it lies between the San Bernardino and San Jacinto mountains, the highest peaks of the range. Leaving San Gorgonio Pass, our course is southwest, passing down one of the tributaries of the San Jacinto, which is known as the Potrero (or Pocket) of the San Jacinto, to the San Jacinto Plains and Temecula Plains—these plains lie between the main range and the Santa Ana range—and down the Temecula Plains to the head of Temecula canyon, and down the canyon, where the Temecula breaks through the Santa Ana range 10 miles to the open valley, striking the coast near the Santa Marguerita ranches, about 40 miles north of San Diego; thence south and down the coast on the western slope of the Solidad mountains, crossing the Solidad, San Louis Rey, San Dieguite and the ravine of La Jolla, skirting False Bay; thence to the shore of San Diego bay, and along the shore of the bay to the depot grounds of the Texas and Pacific Railway below the Pacific Steamship Company's wharf.

Distance from Pima's Villages on the Gila river, 444.4 miles.

Fort Worth to San Diego.....1,457.64 miles.
Shreveport to San Diego.....1,676.64 miles.
Texarkana to San Diego .....1,693.63 miles.

I also offer in evidence the table of elevations, commencing with "Shreveport," on page 33, and ending with "San Diego," on page 34, as follows:

(Printed page 33.)

General Elevation (above the Sea) from Red river to San Diego, on the Line of the Texas and Pacific Railway.

	Feet above tide water.
Shreveport	204
Marshall	377
Jefferson (Jefferson branch)	226
Texarkana (Transcontinental branch)	287
Longview	342
Silver Lake	350
Divide between Sabine and Trinity rivers	529
(Printed page 34.) Dallas	481
Sherman (Transcontinental branch)	734
Fort Worth	629
Weatherford	1,000
Divide between Trinity and Brazos rivers	1,195
Valley of the Brazos	825
Staked Plains	2,850
Highest point on same	3,377
Valley of the Pecos	2,700
Hurd's Pass (Guadaloupe Mts.)	4,493
Valley west of Guadaloupe	3,640
Heuca Pass	5,027
El Paso (or Fort Bliss)	3,732
Table-land (Sierra Madre)	4,420 to 4,520

Summit of Continent	4,893
Peloncello Pass	4,339
San Simon Valley	3,562
Railroad Pass	4,388
Nugent's Pass	4,711
San Pedro river	3,429
Cunega station	4,088
Tucson	1,898
Pima villages	1,193
Fort Yuma	145
Divide between Gila and Colorado desert	437
Salt Lake (dry) in Colorado desert—below tide water	290
Cabazon Valley	998
San Gorgonio Pass	2,621
Santa Marguerita Ranches	104
San Diego (on the Pacific)	16
Tres Alamos	3,729

I also offer in evidence a portion of said report commencing on page 47 with the heading "Conclusion," and ending on page 49 before the words "land department," as follows:

(Printed page 47.)

Conclusion.

The Texas & Pacific Railway opens up to settlement a vast undeveloped agricultural and mineral region, now only unavailable from the want of the means of cheap and quick communication and transportation. It secures to the Government a lasting and permanent peace with the

hostile Indian tribes. It will bring us in direct communication with Mexico, and open up an extensive trade which has heretofore sought other countries. It is a line of even temperature—no snow, no extremes. It is the shortest railroad communication from sea to sea—1,460 miles from harbor to harbor, against 3,300 miles by any other line.

The Union Pacific is a Central Northern line, gives a great (printed page 48) advantage in trade, and access to northern cities, and is the great feeder of northern railroads.

The Texas & Pacific would become the feeder of the general system of railroads running through the south, and would bring into competition the two great systems of the continent, and bring all the means and advantages of the southern system to the development of the trade through the southern States and territories, and allow their roads to compete on equal terms for the trade of the Pacific coast and all other countries whose trade seeks its harbors.

It is the shortest way to Europe from Australia, India, China and Japan—the distance from San Diego to Nangasaki, Japan, 5,709 miles; San Diego to Shanghai, China, 6,264 miles; San Diego to Hong Kong, China, 6,850 miles; San Diego to Sydney, Australia, 15,900 miles.

To accommodate this trade, we have at San Diego a completely landlocked harbor, as safe as any in the world. Vessels drawing 26 feet of water can come alongside our wharves at all stages of weather. The channel of the harbor is 12½ miles long, and about half a mile

wide, the water varying in depth from 20 to 51 feet, giving ample room for a fleet of 1,000 first-class ships to ride at anchor. It is the shortest and most direct line across the continent, is of low grades and light curvatures, and passes all the great mountain ranges to the south, or overcomes them at light grades and low altitudes, below the snow limit. It develops a vast extent of country without any natural means of communication which can be reached in no other way. It settles the Indian question, as along its line is the only territory infested by hostile bands of Indians, and dispenses with a long line of frontier defenses, and will save to the Government at least five million dollars annually, as experience has proved that a railway line through Indian territory is a fortress as well as a highway.

* * * * * * * * * *

Upon my chiefs of divisions most of the work has devolved. They have carried out their instructions with alacrity, ability, and good judgment, and often under difficulties that would have deterred most men. They have all found a line over their respective divisions far superior to any that were supposed to exist. (Printed page 49.) Especially is this the case with the line over the Sierra Nevada mountains and the Guadaloupe range, and these were only determined after months of continued examination and reconnoissances.

Since July, 1872, the surveys have been extended from the Red river, in Texas, to the Pacific Ocean, in the general direction of the 32d parallel of latitude, exploring a country 200 miles in width, developing its resources,

bringing to light its hidden treasures, and fully demonstrating its capability for building and sustaining a railroad to the Pacific Ocean.

The country has been systematically developed. Explorations have been pushed to success, and one after another of the engineering obstacles supposed to exist to the building of the Southern Pacific Railway have been met and overcome; the route of the road has been definitely fixed, and unquestionably is the best to be had across the continent in the zone which has been explored. I desire to extend my thanks for the courtesies and aid extended to me at all times by the military under Generals Augur and Pope, and the officers and troops have cheerfully extended us all the aid and protection we desired.

I desire to call the attention of the company to the able and effectual manner in which Mr. R. S. Hayes, engineer in charge of construction, and Messrs. Evans, Wolcott, Hurd, O'Neill and Hodges, engineers in charge of surveys, and J. M. Eddy, assistant superintendent, and the heads of departments and subordinates have performed their duties and the fidelity with which they have executed their trusts."

I also offer in evidence, on page 51, the signature, as follows: "Respectfully submitted,

G. M. DODGE,
Chief Engineer."

I also offer in evidence from the printed report, the report beginning on page 109 with the words "San Diego, Cal., Feb. 3, 1873," and ending with the words "James A. Evans, Engr. Cal. Division," on page 146, as follows:

(Printed page 109.)

San Diego, Cal., Feb. 3, 1873.

Gen. G. M. Dodge, Chief Engineer.

Dear Sir: I herewith submit a report of engineering operations conducted under my charge on the California Division of the Texas & Pacific Railway. The examinations covered by this report extend over a space of six months, from August, 1872, to January, 1873, both inclusive. A single party was placed in the field in July, but the work was only fairly commenced in August, 1872. Since then the country between the bay of San Diego and the Colorado river has been fully examined; 700 miles of line have been actually run in such a way as to give an estimate of cost, much of which has been over a country where the progress was not more than half a mile per day. In addition to this, reconnoissances have been made, distances measured, and altitudes taken over 300 miles of additional country.

For the better understanding of the work, the several lines will be designated as follows:

Line A.—Otay Valley Line.

Line B.—San Gorgonio Pass Line No. 1, via the San Diego river, Murphy's canyon, Buena Vista, S. Louis Rey, Temecula, Temescal, Riverside and San Bernardino.

Line C.—San Gorgonio Pass Line No. 2, via the coast, Temecula, Temescal, Riverside and San Bernardino.

(Printed page 110.)

Line D.—San Gorgonio Pass Line No. 3, via the coast, Temecula, Santa Gertrude canyon, and the Potrero of San Jacinto.

Line E.—San Gorgonio Pass No. 4, via the coast, Temecula, the Laguna, San Jacinto Valley, Box Springs canyon, Riverside and San Bernardino.

Line F.—San Gorgonio Pass Line No. 5, via the coast, Temecula, San Jacinto Plains, Box Springs canyon, Riverside and San Bernardino.

Line A.—Otay Valley Line.

This line has its initial point within the corporate limits of the city of San Diego, and on land to be used as passenger depot grounds. Passing through a portion of the city, occupied to some extent, although not interfered with, by buildings, it cuts off an arm of the bay, thereby bringing the main line within easy access of the ship channel to lands now owned in fee by the company. So much of the line, whatever course may be taken in getting away from the bay, would be common. Leaving the lands of the Texas & Pacific Railway Company, the line crosses Chollas creek near its mouth, passes through the National rancho, along one of the streets of National City as surveyed, and with easy grades, good alignment, and light work reaches the high mesa land lying between the bay and the mountains.

The section of line above described has been put in with care, and, if adopted, no further location of it will be required. It was thought best to do this, so as to be able to form an idea of how far one line would interfere with property comparatively valuable, as well as to enable the city authorities of San Diego to commence negotiations for right of way.

The line in its progress from the mesa or table-land curves to the left, entering the valley of Otay creek, the drainage of which it follows to its summit.

For a distance of 27 miles from the initial point the line is as above described on the shore of the bay, on the table-land, and in the Otay Valley. The material is generally drift or alluvium; easy to move, with the single exception that at what is known as the bend of the Otay a tunnel of 1600 feet will be necessary, as well as an expensive crossing of the stream itself.

(Printed page 111.)

The material in the tunnel is a metamorphic rock, difficult to drill, and so shattered that a tunnel through the point would very likely require lining. The heavy work here is caused by a sharp projecting spur impossible to avoid by curvature.

At this point (27 miles from zero) the character of the line changes, from the necessity we are under of availing ourselves of the side slopes of the valley to overcome elevation beyond.

This may be considered the foot of the steep gradients of the western slope of the range. From here the line is on the broken slopes of the neighboring hills. On the 31st mile a tunnel 900 feet in length will be necessary, the material in which, being granite, can be removed at less cost than the tunnel before described. Unless it should prove so fragmentary as to require lining, it will not be difficult. Nothing but an examination of the profiles can give an adequate idea of the character of the work from where we leave the valley of the creek to the

summit of this drainage. The summit, when reached, is broad and flat, making it impracticable to lower it by cutting, and so reduce the gradient.

Otay summit is the watershed between the Otay drainage and that of the Tia Juana; the Ysidoro or Cottonwood branch of which, a short distance beyond Otay summit, crosses our direction nearly at right angles, making it impossible within the limit of economy to maintain our general course. The line, therefore, hugs the broken hillside bordering the San Ysidoro canyon on the west, a distance of 6 miles, maintaining a level grade, the fall of the canyon for the distance being over 100 feet per mile; crossing the gorge 130 feet above its bed to an equally broken slope on the eastern side of the canyon, upon which slope the line continues to the mouth of Bear canyon, a tributary gorge, the general direction of which is favorable.

The distance from the crossing of the San Ysidoro to the head of Bear canyon is twelve and two-tenths miles; difference in elevation 1,371 feet. The summit of Bear canyon is not suitable for deep cutting, being broad and flat. We are, therefore, from necessity, obliged to use a grade of 116 feet per mile for the entire distance.

The slopes east of the San Ysidoro and Bear canyons are very broken. The material is granite, either solid or in loose boulders (printed page 112)of great size. The profile gives a succession of deep cuttings and high embankments. The character of the work here would make the arriving at an estimate of quantities difficult. The specifications would always be doubtful; and measurement in some sort impracticable.

The summit of Bear canyon is secondary in character, dividing the drainage of the San Ysidoro from that of Melquaty creek, both tributaries of the Tia Juana; the latter drainage being carried into the San Ysidoro some 8 miles above the mouth by means of Tecate creek. From the summit of Bear canyon easterly, a level grade is used for a distance of 100 miles, while the line is kept on the slope of the hill bordering the Melquaty valley on the north.

Some actual distance might be saved on this section at a loss of elevation and depression, and by the use of heavy gradients. It is a question, however, if operating distance could be saved. Nothing but a location could determine this. If, however, the line has any claims to the adopted one, the attempt should be made.

From the end of this level grade gradients approximating the maximum of 116 feet are used to the head of this drainage at Walker's summit, the dividing ridge between waters flowing eastward to the desert, and those flowing westward to the bay of San Diego. This summit is in no sense a pass, but the crest of the watershed. Its altitude is 3,870 feet above mean low tide; distant from the initial point 81.62 miles.

From this summit to the desert via Carrisso canyon, the descent is continuous, the work from the summit eastward differing but little in character from that west of it, until the head of Carrisso canyon is reached. This canyon is a deep, narrow gorge, the direction of which is nearly north, and parallel with the canyon of the San Ysidoro, heretofore referred to, and from which it does

not differ materially in character, save that the rock on the slopes of the Carrisso is more broken up and fragmentary, the slope steeper, and the projecting spurs sharper and more numerous. The best line we can obtain down the canyon will require, in a distance of 10 miles, eleven tunnels, aggregating in distance 6,755 lineal feet.

(Printed page 113.)

The direction of the gorge of the Carrisso being, as stated, nearly north, the first available opportunity is taken of passing through the hills to the east of it by means of a tunnel 1600 feet in length, which carries the line of the desert slope, which the line follows with variable gradients, some of which are 105 feet per mile. A distance of 31 miles from the mouth of the tunnel last referred to brings the line to the level of the desert plain.

For one-third of the distance last-named, or say 10 miles, the line passes over a smooth slope covered with drift pebbles from the hills, having a substratum of clay, desert, and sterile. The course of the line eastward is over the depression of New river, in which basin or depression the grade line falls to 37 feet below our datum line of mean low rates in the bay of San Diego.

There can be no question but that much of the country passed over by this line, "especially where the soil is of a clayey character," could, by the application of water, be made highly productive.

Some of the country west of the New river basin is covered with a light layer of shifting sand, likely to give some, but no serious trouble in operating the road. The

mode of construction here would be that of having the roadbed in embankments some two feet above the natural surface, which plan would, from necessity, be pursued here, if no shifting sand made it desirable.

From the crossing of New river (which is nothing more than back water from the Colorado in time of freshets) to the sandhills, the character of the country does not differ materially from it, except that more of the ground is covered with a scattering growth of mesquite timber, well adapted for fuel; indeed, on no part of this line can this necessary material for operating the road be had so readily or with so little cost.

The total distance from San Diego to the sand hills of the desert is 178 miles. These sand hills, which are impossible to avoid by a direct line from the Carrisso canyon, seem to be an accumulation of drifting sand carried by the prevailing winds from the upper gravelly plain to the desert. They extend from northwest to southeast. Our line via San Gorgonio Pass (printed page 114) goes to the north and barely touches them. They extend across the Mexican boundary line, increasing in altitude and width of base as we follow them from north to south.

There are two ways of avoiding them altogether: First, by changing the direction of the line from where the level plain of the desert is reached, and connecting with the line from the San Gorgonio Pass; or second, by dropping below the boundary line between the United States and Mexico. The former would lengthen the distance from San Diego to Fort Yuma 18 miles; the latter

would not increase the distance materially, but would be in foreign territory for a distance of 8 miles.

Total distance from depot grounds at San Diego to crossing of Colorado river at Fort Yuma, 203.11 miles.

Table of Grades.

	Ascending Miles.	Descending Miles.
Between 0 feet per mile and 20 feet per mile	35.29	12.39
" 20 feet per mile and 40 feet per mile	14.21	8.28
" 40 feet per mile and 60 feet per mile	9.67	2.02
" 60 feet per mile and 80 feet per mile	6.36	13.32
" 80 feet per mile and 105 feet per mile	16.86	28.64

	Ascending Miles.	Descending Miles.
Maximum of 116 feet per mile	11.68	
Level grade		44.39
Distance ascending	94.07 miles.	
" descending	64.65 "	
" level grade	44.39 "	
Total distance	203.11 miles.	

Estimate of Cost—Section No. 1.

From Depot Grounds to Station 908+70, Foot of Grade in the Otay Valley.

Distance 26.8 miles.

541,464	C. yards earth excavation at	$ 32	$173,683 12
53,000	" " loose rock " "	1 00	53,000 00
53,000	" " solid " " "	2 25	119,250 00
17,500	" " tunneling at	14 00	245,000 00
525	" " second-class masonry at	10 00	5,250 00
995,747	feet, B. M., timber in trestles, at	50 00	49,787 35
28,070	pounds of wrought-iron bolts at	10	2,807 00
19,746	pounds of cast-iron washers at	8	1,579 68
26.8	miles superstructure—including iron, ties, laying, &c., at	13,000 00	348,400 00
40,284	lin. feet piling	50	20,142 00

26.8 miles at $38,205.00 per mile, $1,023,899.15.

Section No. 2.

From Station 908+70, Foot of Heavy Grade, to Station 4,300, in the Carriso Canyon.

Distance 81.57 Miles.

2,970,736	C. yards earth excavation at	$ 30	$ 891,220 80
943,320	C. yards loose rock excavation at	1 00	943,320 00
1,907,903	C. yards solid rock excavation at	2 00	3,815,806 00
220,000	C. yards solid rock excavation at	1 75	385,000 00
116,741	C. yards tunneling at	12 00	1,400,892 00
6,156	C. yards first-class masonry, at	20 00	123,120 00
21,830	C. yards second-class masonry, at	12 00	261,960 00
600	lin. feet of truss bridging at	38 00	22,800 00
7,055,967	feet, B. M., timber in trestles, at	50 00	352,798 35
111,892	pounds wrought-iron bolts at	10	11,189 20
154,012	pounds cast-iron washers at	8	12,320 96
81.51	miles superstructure—iron, ties, track-laying, &c., at	13,000 00	1,060,410 00

81.57 miles at $113,777.00 per mile, $9,280,837.31.

Section No. 3.

From Station 4,300 in Carriso Canyon to Station 5,300 on the Desert.

Distance, 18.94 Miles.

1,339,850	C. yards earth excavation at	$	28	$375,158 00
96,073	C. yards loose rock excavation at		1 00	96,073 00
692	C. yards first-class masonry at		20 00	13,840 00
5,092	C. yards second-class masonry at		12 00	61,104 00
962,228	feet, B. M., timber in trestles, at		50 00	48,111 40
18,106	pounds wrought-iron bolts at		10 00	1,810 60
22,722	pounds cast-iron washers at		8 00	1,817 76
18.94	miles superstructure—iron, ties, track-laying, &c., at		13,000 00	246,220 00

18.94 miles at $44,568.00 per mile, $844,134.76.

Section No. 4.

From Station 5,300 to Colorado River at Fort Yuma.

Distance, 75.8 Miles.

1,094,215	C. yards earth excavation at	$	25	$273,553 75
62	C. yards second-class masonry at		12 00	744 00
415,676	feet, B. M., timber in trestles, at		60 00	24,940 56
8,376	lin. feet piling at		80	6,700 80
10,888	pounds wrought-iron bolts at		10	1,088 80
5,098	pounds cast-iron washers at		8	407 84
75.8	miles superstructure—iron, ties, and track-laying, at		13,000 00	985,400 00

75.8 miles at $17,056.00 per mile, $1,292,835.75.

Summary of Cost.

Section No. 1	26.8	miles,	$1,023,899 15
" " 2	81.57	"	9,280,837 31
" " 3	18.94	"	844,134 76
" " 4	75.8	"	1,292,835 75
203.11 miles at $61,256.00			$12,441,706 97

Total amount of elevation	4,580.8 feet.
" " " depression	4,452.1 "
" " " curvature	17,864 degrees.

The foregoing estimate is based upon a width of roadbed of 16 feet in cuttings and 12 feet where the work is on embankment. In the side hill work, more especially in the San Ysidoro and Carrisso canyons, where the deep gulches occur, the estimate is based upon the supposition that we take what excavation there may be in the adjacent cuttings to form a base for trestle-work of timber. In a few cases an amount of borrowed material is estimated, so as to bring the length of posts within 100 feet. In one case, crossing the Cottonwood, or San Ysidoro, four spans of truss bridging have been estimated, making 600 lineal feet. The mode of estimating this line, and the same is true of all the lines, has been this: The line has been estimated in embankment. Wherever the material in the excavation is shown to be beyond a reasonable haul (1,000 feet), that quantity has been added. All cuttings have been classified. On the rocky sections of the work, the foot of the heavy gradient, twenty-seven miles from the initial point, the material in excavation has been assumed

to be twenty-five per cent earth, twenty-five per cent loose rock, and fifty per cent solid rock. This classification is believed to be tolerably correct, so far as the cuttings are concerned.

The material which it is necessary to obtain for roadbed outside of the cuts proper, technically termed "borrowed," is assumed to be earth; it forms a considerable part of what is termed "earth excavation" in the estimates.

The character of the mountain rock and its material on this line is such that it may be difficult to obtain the quantity of earth for the purpose. A large quantity of loose rock may have to be obtained, which would increase the aggregate of the estimate and the cost of the work.

The amount of curvature on this line, 17,864 degrees, is excessive, indicating of itself a very broken country. It will be very readily seen, if the total curvature be divided or distributed over that part of the line where it occurs, viz., between the foot of the grade and where the line leaves Carrisso canyon, a distance of 83 miles, it will be found to give a curve of 4 degrees per station; radius, 1432 feet for that entire distance. Curves of eight degrees and ten degrees will be found necessary on this line in many places, as in Carrisso canyon and also in (printed page 118) the San Ysidoro. A lateral shift of a few feet would place the line in heavy work, in some cases making a difference of eighty or one hundred feet in the altitude. Nothing short of an actual inspection of the line on the ground can convey an adequate idea of the character of the work. It is safe to assume that no bids by the yard for doing

much of this work would be had. There would always be a doubt as to classification and a difficulty in holding material once disturbed in its place.

In consequence of the rocky character of the mountain section of this line, the grade line has been thrown out of cutting as much as a due regard for economy will warrant; the embankments are therefore heavier to some extent. Much of the heavy embankment is replaced by timber, as is evidenced by the large amount of that material provided for in the estimate.

San Gorgonio Pass Line.

As on the western slope we have several approaches to this pass, it will be necessary to institute a comparison between them, so as to arrive at the best line as to cost of construction and economy of operating.

What is designated in the index as San Gorgonio Pass Line No. 1 starts from the so-called depot grounds, at the foot of Spring street, San Diego, having a common starting point with the Otay Valley Line. At old San Diego distant from the initial point 2.65 miles, we have the starting point of San Gorgonio Pass Line No. 2; Line No. 1 following the San Diego river for a short distance, thence up Murphy's canyon, keeping in the interior crossing the drainage of the Soledad, Penasquitas, San Diegito and San Luis Rey, dropping into the valley of Temecula creek.

The latter, or Line No. 2, from its diverging point at old San Diego, hugs the coast as far as the Santa Marguerita Rancho, where the Temecula creek finds its way to the

sea, up the valley of which it runs, connecting with Line No. 1.

In the comparison we may consider the distance of 2.65 miles as common to both lines.

Distance, Line No. 1	64.5 miles
Distance, Line No. 2	59.3 miles
Elevation, Line No. 1	2,020.6 feet
Elevation, Line No. 2	903.6 feet
Depression, Line No. 1	1,624.7 feet
Depression, Line No. 2	521.9 feet

It will be seen from the above that distance is in favor of the coast line—elevation and depression largely in favor of it; and, when we take into account that much of the additional elevation and depression on the interior line is surmounted by means of heavy grades of 105 feet to the mile, whereas on the coast line no gradient of more than 63 feet per mile is necessary, the comparison is greatly in favor of the coast line. To make the comparison more complete, the following estimate of both sections is submitted:

Section of Line No. 1.—Interior Line.

Distance, 64.5 Miles.

1,369,216	C. yards earth excavation at	$	30	$410,764 80
315,681	C. yards loose rock excavation at		1 00	315,681 00
411,541	C. yards solid rock excavation at		2 00	823,082 00
14,040	C. yards tunneling at		12 00	168,480 00
5,168	lin. feet piling at		60	3,100 80
3,709	C. yards second-class masonry at		12 00	44,508 00
1,418,967	feet, B. M., timber in trestles, at		50 00	70,948 33
31,615	lbs. wrought-iron bolts at		10	3,161 50
25,674	lbs. cast-iron washers at		8	2,053 90
64.5	miles of superstructure—iron, ties and track-laying, at		13,000 00	838,500 00

64.5 miles at $41,554 per mile, $2,680,280.37.

Estimate of Part of Line No. 2.—Coast Line.

Distance, 59.3 Miles.

1,782,891	C. yards earth excavation at	$	30	$534,867 30
60,721	C. yards solid rock excavation at		2 00	121,442 00
5,926	C. yards tunneling excavation at		10 00	59,260 00
2,900	C. yards first-class masonry at		20 00	58,000 00
2,000	C. yards second-class masonry at		12 00	24,000 00
77,714	lin. feet piling at		50	38,857 00
1,840,270	feet, B. M., timber in trestles, at		50 00	92,013 50
63,114	lbs. of wrought-iron bolts at		10	6,311 40
31,248	lbs. of cast-iron washers at		8	2,499 84
2,250	lin. feet of truss bridging at		38 00	85,500 00
59.3	miles of superstructure—iron ties, &c., at		1,300 00	770,900 00

59.3 miles at $30,247 per mile, $1,793,651.04.

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It is possible that some of the material classified above on "sec. of line No. 1" may be proved to be soft, loose rock. With our present arrangements or grades, if so, it will not be difficult to lift our line out of it. The character of the work along the coast is so favorable that the price attached (30 cents per yard) is high, and will go far towards remedying any error in classification.

As there is a difference of five and two-tenths miles in distance, a large difference in cost of construction, as well as in cost of operating, all in favor of the coast line, we may discard the interior line altogether. From the convergence of the two sections last referred to and compared, the line continues up the narrow canyon of Temecula creek for a distance of 7.26 miles, which distance is necessarily common to all lines approaching the San Gorgonio Pass from the bay of San Diego. A further description of the canyon will be given hereafter.

At the head of Temecula canyon we find the second divergent point of lines Nos. 1 and 2, the first going by way of the Laguna, Temecula creek, Riverside and San Bernardino to the San Gorgonio Pass, and the latter by a direct line via the Potrero of San Jacinto.

Line B.—"Gorgonio Pass Line No. 1," being disposed of by the comparison already made, we will now consider Line C, "Gorgonio Pass Line No. 2," as from the head of Temecula canyon, B and C are common.

Lines E and F are but modifications of Line C, the first (E) diverging from it at the Laguna and connecting again near Riverside, in the Santa Anna valley; the latter (F)

diverging at the head of Temecula canyon, occupying for a short distance common ground with the direct line (D), and connecting with Line E on the San Jacinto plains, from whence E and F are identical to point of connection with line C, near Riverside.

It will be necessary, therefore, to compare, first, Lines E and F; secondly, to compare the best of the two with Line C.

Distances are as follows:

Head of Temecula conyon to Riverside, Line E, 47.18 miles.

Head of Temecula canyon to Riverside, Line F, 43.61 miles.

	Line E.	Line F.
Total elevation	678.5 feet	679.3 feet
Total depression	705 feet	753.7 feet

Estimate of Line E.

From Head of Temecula Canyon to Riverside.

Distance, 47.18 Miles.

357,991	C. yards earth excavation at.....	$ 30	$107,397 30
73,871	" " loose rock " ".....	1 00	73,871 00
147,742	" " solid " " ".....	2 00	295,484 00
883	" " second-class masonry at.....	12 00	10,596 00
728	lin. feet piling at.....	60	436 80
552,618	feet, B. M., timber in trestles, at.....	50 00	27,630 90
12,759	pounds wrought-iron bolts at.....	10	1,275 90
6,756	pounds cast-iron washers at.....	8	405 36
47.18	miles superstructure—iron, ties and track-laying, at	13,000 00	613,340 00

47.18 miles at $23,960.00 per mile, $1,130,437.26.

Estimate of Line F.

From Head of Temecula Canyon to Riverside.

Distance, 43.61 Miles.

420,531	C. yards earth excavation at.....	$ 30	$126,159 30
75,475	" " loose rock " ".....	1 00	75,425 00
150,856	" " solid " " ".....	2 00	301,712 00
1,699	" " second-class masonry at.....	12 00	20,388 00
508,702	feet, B. M., timber in trestles, at.....	50 00	25,435 10
12,022	pounds wrought-iron bolts at.....	10	1,202 20
6,528	" cast-iron washers at.....	8	522 24
43.61	miles superstructure—iron, ties and track-laying, at.....	13,000 00	566,930 00

43.61 miles at $25,633.00 per mile, $1,117,773.84.

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Estimate of Line C.

From Head of Temecula Canyon to near Riverside.

Distance, 53.66 Miles.

301,808	C. yards earth excavation at.....	$ 30	$90,542 40
48,362	" " loose rock " ".....	1 00	48,362 00
400	" " second-class masonry at.....	12 00	4,800 00
3,128	lin. feet piling at	60	1,876 80
340,284	feet, B. M., timber in trestles, at.....	50 00	17,014 20
8,831	pounds wrought-iron bolts at.....	10	883 10
5,292	" cast-iron washers at	8	423 36
53.66	miles superstructure—iron, ties and track-laying, at.....	13,000 00	687,580 00

53.66 miles at $15,870.00 per mile, $851,481.86.

	Line F.	Line C.
Total elevation.....	679.3 feet.	732.35 feet.
" depression.....	753.7 "	715.05 "

The comparison here again resolves itself into one of distance and cost, the elevation and depression on one line approaching that of the other very nearly. If the grades were equated on both lines, the distance of 43.61 miles length of line F would be made to approach that of Line C, caused by the heavier gradients of the former.

The advantages of this section of Line C over the shorter line are, as seen, a difference in cost of $266,292.00, and the better opportunity it offers for northern connections, as where the line deflects to the right out of the Temescal Valley the distance to Los Angeles cannot be more than 37 miles. Either line would open up the country bordering the Santa Ana river, and that of San Bernardino.

We will now compare Lines C and D from their divergence at the head of Temecula canyon to where they converge in the pass of San Gorgonio.

Distance from Temecula canyon to Pass Line C, 78.39 miles.

Distance from Temecula canyon to Pass Line D, 40 miles.

	Line C.	Line D.
Total elevations	2,414.35 feet	1,774.4 feet
Total depressions ...	755.05 feet	77.9 feet

(Printed page 123.)

Estimate of Line C.

From Head of Temecula Canyon to San Gorgonio Pass.

Distance, 78.39 Miles.

531,808	C. yards earth excavation at.....	$ 30	$ 159,542 40
95,665	" " loose rock " "	1 00	95,665 00
345	" " second-class masonry at.....	12 00	4,140 00
3,128	lin. feet piling at.....	60	1,876 80
47,258	feet, B. M., timber in trestles, at.....	50 00	27,362 90
13,912	pounds wrought-iron bolts at.....	10	1,391 20
6,812	" cast-iron washers at.....	8	684 96
78.39	miles superstructure—iron, ties and track-laying, at.....	13,000 00	1,019,070 00

78.39 miles at $16,708.00 per mile, $1,309,733.26.

NOTE.—The additional elevation and depression on this line is caused by the secondary summit between the Temecula and Temescal.

Estimate of Line D.

From Head of Temecula Canyon to San Gorgonio Pass.

Distance, 40 Miles.

839,381	C. yards earth excavation at.....	$ 30	$251,814 80
95,968	" " loose rock " "	1 00	95,968 00
191,939	" " solid " " "	2 00	383,878 00
6,498	" " tunneling at.....	10 00	64,980 00
2,724	" " first-class masonry at.....	20 00	54,480 00
2,574	" " second-class " "	12 00	30,888 00
350	lin. feet truss bridging at.....	38 00	13,300 00
1,204,000	feet, B. M., timber in trestles, at.....	50 00	60,200 00
24,623	pounds wrought-iron bolts at.....	10	2,462 30
17,660	" cast-iron washers "	8	1,412 80
40	miles superstructure—iron, ties and track-laying, at.....	13,000 00	520,000 00

40 miles at $36,985.00 per mile, $1,479,383.90.

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The aggregate cost of the sections last considered differ $169,650. To offset this, we have the shorter distance on Line D, with a much better arrangement of grades, as our ascent is continuous from the head of Temecula canyon to the pass; whereas, on Line C, we make the subsidiary summit between the Temecula waters and those of Santa Anna creek via the Temescal.

If grades were equated, the difference in operating distance would be further increased. Throwing aside whatever advantages Line C may have in the matter of future connections, we will be quite safe in assuming Line D to be the best in an engineering point of view.

It will be understood that all the lines via Gorgonio Pass have a common extension from the pass to the Colorado river.

I shall now give an estimate of the cost of Line D from the initial point to the crossing of the Colorado river. Total distance from initial point in San Diego to the crossing of Colorado river at Yuma, 270.34 miles.

Total amount of elevation .....4,138.7 feet
Total depression .....3,995.9 feet

Table of Grades.

	Ascending.	Descending.
Between 0 feet and 20 feet per mile.....	63.26	43.65
" 20 " " 40 " " "	32.27	20.30
" 40 " " 60 " " "	10.20	13.85
" 60 " " 80 " " "	7.73	9.62
" 80 " " 105 " " "	13.79	14.65
Level.....	.....	41.02
Total.....		270.34
Maximum grade of 105 feet per mile.....	9.83	6.37

Total amount of curvature 6,354 degrees.

Estimate, Section No. 1.

From Depot Grounds via the Coast to Head of Temecula Canyon.

Distance, 67.08 Miles.

1,812,195	C. yards earth excavation at.....	$ 30	$543,658 50
165,689	" " solid rock " ".....	2 00	331,378 00
8,122	" " tunneling at.....	10 00	81,220 00
2,900	" " first-class masonry at.....	20 00	58,000 00
2,932	" " second-class " ".....	12 00	35,184 00
15,000	" " slope wall at.....	5 00	75,000 00
2,250	lin. feet truss bridging at.....	38 00	85,500 00
77,714	" " piling at.....	50	38,857 00
2,356,908	feet, B. M., timber in trestles, at.....	50 00	117,845 40
74,749	pounds wrought-iron bolts at.....	10	7,474 90
46,434	pounds cast-iron washers at.....	8	3,714 72
67.08	miles superstructure—iron, ties, and track-laying, at.....	13,000 00	872,040 00

67.08 miles at $33,540.00 per mile, $2,249,872.52.

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Estimate, Section No. 2.

Head of Temecula Canyon to San Gorgonio Pass.

Distance, 39.98 Miles.

839,581	C. yards earth excavation at	30	$251,874 30
95,968	" " loose rock " "	1 00	95,968 00
191,939	" " solid " " "	1 75	336,893 25
6,498	" " tunneling at	10 00	64,980 00
2,724	" " first-class masonry at	20 00	54,480 00
2,574	" " second-class " "	12 00	30,888 00
350	lin. feet truss bridging at	38 00	13,300 00
1,204,000	feet, B. M., timber in trestles, at	60 00	72,240 00
24,623	pounds wrought-iron bolts at	10	2,462 30
17,660	" cast-iron washers at	8	1,412 80
39.98	miles superstructure—iron, ties, and track, at	13,000 00	519,740 00

39.98 miles at $36,098.00 per mile, $1,443,178.65.

Estimate, Section No. 3.

San Gorgonio Pass to Fort Yuma.

Distance, 163.28 Miles.

880,598	C. yards earth excavation at	$ 30	$264,179 40
51,000	" " loose rock " "	1 00	51,000 00
21,000	" " solid " " "	2 00	42,000 00
1,320	" " second-class masonry at	10 00	13,200 00
4,800	" " slope wall at	5 00	24,000 00
53,650	lin. feet piling at	70	37,555 00
20,810	pounds wrought-iron bolts at	12	2,497 20
9,845	pounds cast-iron washers at	8	984 50
668,078	feet, B. M., timber in trestles, at	70 00	46,765 46
163.28	miles superstructure—iron, ties and track, at	13,000 00	2,122,640 00

163.28 miles at $15,953.00 per mile, $2,604,821.56.

Summary.

Section No. 1	67.08	miles.	$2,249,872 52
" " 2	39.98	"	1,443,178 65
" " 3	163.28	"	2,604,821 56
$23,296.00 per mile	270.34	"	$6,297,872 73

We have now a full estimate of costs, distances, table of grades, etc., on Line A, "Otay Valley Line," and on Line D, which has proved to be the best approach to the San Gorgonio Pass from the bay of San Diego, and can now institute a comparison between them:

(Printed page 126.)

Comparison.

	Line A.	Line D.
Distance	203.11 miles.	270.34 miles.
Elevation	4,580.8 feet.	4,138.7 feet.
Depression	4,452.1 feet.	3,995.9 feet.
Curvature	17.864 degrees.	6.354 degrees.
Cost per mile	$61,256 00	$23,296 00
Total cost	$12,441,706 97	$6,297,872 73

Table of Grades—Line A.

									Ascending Miles.	Descending Miles.
Between	0	feet	and	20	feet	per	mile	.....	35.29	12.39
"	20	"	"	40	"	"	"	.....	14.21	8.28
"	40	"	"	60	"	"	"	.....	9.67	2.02
"	60	"	"	80	"	"	"	.....	6.36	13.32
"	80	"	"	105	"	"	"	.....	16.86	28.64
				116	"	"	"	.....	11.68	
					Level			....	.....	44.39
					Total			.....	203.11 miles.	

Table of Grades—Line D.

									Ascending Miles.	Descending Miles.
Between	0	feet	and	20	feet	per	mile	.....	63.26	43.65
"	20	"	"	40	"	"	"	.....	32.27	20.30
"	40	"	"	60	"	"	"	.....	10.20	13.85
"	60	"	"	80	"	"	"	.....	7.73	9.62
"	80	"	"	105	"	"	"	.....	13.79	14.65
				105	"	"	"	.....	9.83	6.37
					Level			.....	.....	41.02
					Total			.....	270.34 miles.	

It will be seen from the preceding tables that only in the matter of distance has the Otay Valley Line (A) any superiority over the San Gorgonio Pass Line (D). This is more in seeming than in reality, being more than neutralized by the heavy gradients, additional elevation, and excessive curvature of the Otay Valley line.

(Printed page 127.)

If we take an engine weighing 30 net tons, all of which is placed on the drivers, having cylinders 16 inches in diameter, with a stroke of 22 inches, driving-wheels 60 inches in diameter, working with an effective pressure of 105 pounds per square inch of piston, we have a tractive force.

$$\frac{16 \times 16 \times 22 \times 105 — 9856 \text{ lbs.}}{60}$$

The opposing force can be resolved into friction of engine, tender, and cars, resistance of gravity on inclinations and curvatures. We will assume friction of engine and tender to be 350 pounds; friction of cars, "a mean of several experiments," to be 6 pounds per ton. Resistance due to gravity—the formula:

$$\frac{W \times G}{5280}$$

(W—weight in pounds. G—grade in feet per mile.)

With the data assumed, we find that the engine will move on level grade 1,584 tons.

On a grade of 15 feet per mile.....820 tons
On a grade of 30 feet per mile.....546 tons
On a grade of 50 feet per mile.....371 tons
On a grade of 70 feet per mile.....293 tons
On a grade of 92½ feet per mile.....222 tons
On a grade of 116 feet per mile.....182 tons

We find, therefore, that a grade of

15 feet per mile for 1 mile equals—1.93 miles of level
30 feet per mile for 1 mile equals—2.9 miles of level
50 feet per mile for 1 mile equals—4.3 miles of level
70 feet per mile for 1 mile equals—5.4 miles of level
92½ feet per mile for 1 mile equals—7.1 miles of level
116 feet per mile for 1 mile equals—8.7 miles of level

If we assume the tonnage from east to west is equal to that from west to east, and apply the ratio, we find the 203.11 miles of the Otay Valley Line to be equal to 782.78 miles of straight level line. Taking the curvature, 17,864 degrees, and resolving it into a three-degree curve, equal to a grade of seven and one-half feet per mile, we have an additional length of level line of 146.64 miles, making in the aggregate, 929.42 miles.

(Printed page 128.)

Applying the same process to the San Gorgonio Pass Line (D), we find the 270.34 miles to equal 827.82 miles of level line. Taking, as in the last case, the curvature, and treating the 6,354 degrees in the same manner, we have an additional distance equivalent to a level line of 52 miles, a total of 879.82 miles, or forty-nine and six-tenths miles in favor of the San Gorgonio Pass Line (D).

It may be stated, further, that the method used of reducing the curvature as above is largely in favor of the Otay Valley Line, as much of it would have to be used in six, eight, and ten degrees curves, which, unfortunately, would occur on its heaviest grades.

No distance can be saved in location on the Otay Valley Line; but, rather, as already noticed, an additional dis-

tance of 18 miles would have to be made to avoid the sand hills of the desert.

A distance equal to two miles can be saved in location on Line D, as well as a saving of 100 feet in elevations. This was caused by the manner of making connection of Line D with Line C in the Gorgonio Pass, it is quite evident from an inspection of the map.

San Gorgonio Pass Line (D).

For purposes of description, this line may be conveniently divided into three sections:

First.—From the initial point in San Diego along the coast to the Rancho Santa Marguerita.

Second.—From the Rancho Santa Marguerita to San Gorgonio Pass.

Third.—From the San Gorgonio Pass to the crossing of the Colorado river at Fort Yuma.

Section 1.

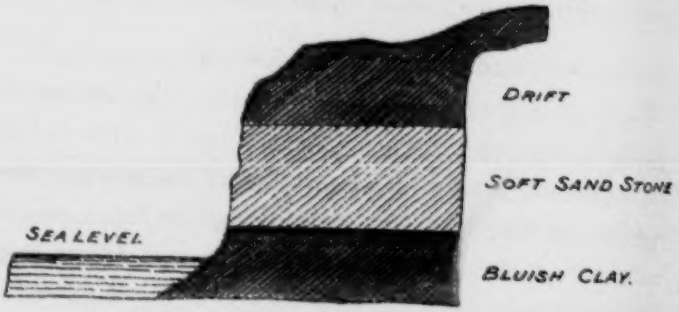
The initial point, as before stated, is identical with the zero of the Otay Valley Line. It passes along the shore of San Diego bay, with a general direction of N. N. W. to False bay, the channel of which it crosses where it is narrow and general depth of water slight, to the western slope of the Soledad mountains, continuing along that slope with easy grades and light work to the depression of La Jolla, a small ravine debouching directly to the ocean.

(Printed page 129.)

From this ravine of La Jolla to the mouth of Soledad creek, a distance of five and four-tenths miles, the break-

ers wash the base of a cliff. The Soledad mountain putting out a spur seaward for the whole distance, the heavy work on the coast line is mostly confined to this section.

The cliff presents nearly this profile:



Of the 1,782,891 cubic yards of material on this section, full 50 per cent is chargeable to this distance of less than five and a half miles. It is believed that a better arrangement of grade can be adopted on location than that I have used to make the estimate upon, and a saving made in quantities thereby.

From the vicinity of the Soledad to where the line deflects to the right, entering the Santa Marguerita Valley the country is favorable in many places; the cliff-like character of the country ceases, being replaced by a slope sufficiently flat so that the line can be placed upon its face without danger, or the moving of much material; and, again, where cliffs do occur, they are surmounted by flat table-lands easy of access, and conforming very nearly to a practicable grade.

Some elevation is lost from the necessity we are under of dropping into the valleys, viz., the La Jolla, Soledad, San Diegat, San Louis Rey, etc.

The maximum grade on this section will not exceed 60 feet per mile.

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Section No. 2.

The distance from the Santa Marguerita valley to Los Angeles, via San Juan Capistrano and *Atahein* is estimated to be 74 miles, and the character of the country quite favorable for a railway.

From the Santa Marguerita valley, our line enters the canyon of Temecula creek. The initial point of this section (No. 2) may be considered the foot of steep grade on the San Gorgonio Pass Lines. The canyon is 10 miles in length, and is caused by the breaking through of the drainage of the Temecula basin through the Santa Ana mountains. The gorge is quite narrow in places; in seasons of freshet, the narrow channel being occupied solely by the water, as evidenced by marks on the rocks bordering the stream. A mode of construction interfering as little as possible with the waterway will have to be adopted. A reference to the estimates will show a liberal quantity of slope wall masonry provided for this part of the line.

The amount of work in the canyon is not excessive. The material will prove to be nearly all rock, and it has been so estimated. The grades are not as heavy as is usual in places of similar character, the maximum be-

ing 100 feet per mile for two miles of the distance through the canyon.

After leaving the gorge, the line crosses the open plain of Temecula, from whence it takes a course directly for the pass of San Gorgonio. This Temecula plain is an open valley between the main range and the Santa Ana mountains. The Temecula plain and the San Jacinto plain, both of which our line crosses, occupy the interval between the slope of the San Jacinto mountains and the secondary range or spur, called the Santa Ana mountains. The direction of the depression of the Temecula plain is northwest; estimated distance to Los Angeles, eighty miles; all of which is over a favorable country. Forty miles of it would be up a tributary of the Temecula and down the Temescal creek, the same ground as that occupied by our San Gorgonio Pass Line C.

From the head of Temecula canyon, the line is everything that can be desired for a distance of 24.81 miles, which takes (Printed page 131) in the slope of the Temecula basin and San Jacinto plain; from thence we follow up a tributary of San Jacinto creek to what is known as the Potrero. It is on this section that most of our heavy gradients of 105 feet per mile occur, as well as the greater part of our rock work and curvature.

This Potrero, or "pocket," opens out into the pass of San Gorgonio. A reference to the map will show that Line D tends to the left here, whereas it should bear to the right; this was done for the purpose of connection with the zero of a line starting from the pass. As a consequence, some two miles of distance is seemingly sacri-

ficed, and about 100 feet of elevation. The altitude of this, the best defined of all mountain passes, is 2,621 feet for line approaching it from San Bernardino, and 2,520 for a line via the Potrero. This seeming discrepancy is caused by the pass being triangular, having a drainage eastward to the desert, westward to the Santa Ana river, and southward to the San Jacinto. The trend of the summit is, therefore, diagonally across the broad plain of the pass, dropping off in elevation as the crest is followed southeasterly, which will readily account for the difference of 100 feet in favor of Line D via the Potrero of San Jacinto.

It is somewhat remarkable that this, the lowest of all the passes in the range, should be flanked by the highest mountains, having the high peak of San Bernardino to the north and that of San Jacinto, sometimes called San Gorgonio, to the south of it.

Section No. 3.

From the summit of San Gorgonio Pass, the line commences at once the descent towards the desert. Our profile shows light work, with maximum grades of 105 feet per mile, descending, until the mouth of Coahuila valley and the plain of the desert is reached. The grades down this slope are valuable and undulating, a constant descent being used. By increasing work and using a uniform grade a lower rate may be had. This would necessitate a closer adhering to the lateral slopes of the valley, and would increase quantities. As this is a part of the line not examined by myself personally, attention is

called to the accompanying report of Mr. J. U. Crawford, the assistant engineer, who made the survey:

(Printed page 132.)

San Diego, February 5th, 1873.

Jas. A. Evans, Esq., Eng'r Cal. Div. T. & P. Railway.

Dear Sir: I have the honor to report that on the 7th day of October, A. D. 1872, the corps of engineers under my charge began our exploration at the summit of the divide in San Gorgonio Pass. We found the summit to be a broad, triangular one, approached by three separate and distinct drainages—one from the west via the San Temotes canyon, a tributary of the Santa Ana river; another from the south via the Potrero canyon, a feeder of the San Jacinto; and a third one from the east via the San Gorgonio canyon, which unites with the Whitewater drainage. These several systems, forking at their heads into innumerable avogos and washes, made the establishing of the most advantageous summit a matter of some difficulty, and one only to be finally determined upon by the development of the ground by cross levels. This has been successfully accomplished. We commenced by laying a line in an easterly direction, down the San Gorgonio canyon in the direction of Whitewater, adhering mainly to the bottom and northern slope of the valley, and obtaining most satisfactory results as to the cost of construction, alignments and gradients.

I found the soil generally to be mixed with boulders and covered with a close undergrowth of cactus and catclaw brush, among which cattle can find some little pas-

ture. The side hill, for the greater part, is an even slope, broken occasionally by shallow cross drainage. Some 2½ miles to the north of where our line crosses the summit lies a ranch owned by Dr. Edgar. This is a well watered and exceedingly fertile estate, prolific in fruit and vines; a fine quality of wine is made at this place and bears the name of the summit. At this point, and adjacent to our line, are some never failing springs, which could easily be made available. Some 5¼ miles east of the summit our line passes 2½ miles from Gelman's ranch and Stage station, at which point a fine running spring would furnish an abundant supply of water, which Gelman freely tenders to the company in the event of their locating near them. Vandeverter's ranch is situated twelve miles from the summit and a mile north of (Printed page 133) the line. Here, also, water can be readily brought to the line. Further on, nineteen miles from the summit, we pass Whitewater Stage station, leaving it 1¼ miles to the north. Here we also find water in abundance. In this case, as is also the same with the others, the spring has a good head, and would be self-feeding to a height of fifty feet above the track.

Throughout the San Gorgonio Pass we found any amount of coarse granite rock, suitable for building masonry; while the sides and top of the San Jacinto mountains, and the ravines which cut deep into the sides of the San Bernardino mountains, are covered with a thick growth of pine, cedar, and oak, which is visible from the line, though apparently rather inaccessible. Upon our arrival at Whitewater station, I discontinued the sur-

vey of the line for the time being, and for a time operated on the western slope in the direction of Temecula, until the 27th day of November, 1872, when the line was again resumed, and pushed on past White river, where I found, for this season of the year, an unlimited supply of water fed from the mountains; when our party passed about midday it was running briskly. Our teams went on about three miles, skirting the stream, and pitched camp upon its border. They then began to fill the water barrels of the outfit, when suddenly the stream commenced to die away and sink from their view; so much so that, notwithstanding they closed it up, the party fared poorly for water that night; however, in the morning it was running briskly again. This, however, only occurs when it leaves the side hill and debouches upon the broad sandy expanse of the Coahuila Valley.

From this point as far as the Cabazon valley we passed through an arid, sandy, desert region, with no vegetation, save an occasional greenwood bush. Avoiding the sand hills, which laid for the most part in a ridge to the south of us, we laid a very direct line, without encountering any obstacles to cheap and rapid construction, to the Cabazon valley, which we entered some fifty miles southeast from the summit. Here we found the soil to have changed to a rich sandy loam, susceptible of successful cultivation by the aid of irrigation. There appears to be water in abundance, as wherever the Indians have dug for it their efforts have been (Printed page 134) rewarded, they always finding it within ten to fifteen feet of the surface.

The whole surface of this valley is covered with a thick growth of mesquite and arrow weed, which in a great measure protects it from the baneful influence of the sand storms which are prevalent here.

The Conia tribe of Indians live in this valley. They numbered some 1,700 souls when the last census was taken, but have since become reduced in numbers. They are a stalwart, hearty set of men, and subsist principally upon the mesquite bean, and the small game they are able to kill with their arrows, in the use of which they are exceedingly expert.

After leaving this valley, the line passes below tide level, and crosses the northern extremity of the Great Salt Lake of the Colorado desert. At the place of our crossing we did not strike water, but skirted it, as the mud was deep and tenacious; after which we crossed a large alkaline deposit, upon large blocks of almost pure salt, from 4 to 6 feet square and 8 to 10 inches in thickness, tassellated like a pavement, and almost correspondingly solid, which passed, we began to ascend, and traversing the southern projection of what had apparently been in ages remote a submerged island of disintegrated sands, stones, shells, a large deposit of gypsum and laminated mica. The slope was cut up in places by subsequent washes and drainage, and was completely bare of vegetation; to our north, and crossing this island, towered abruptly a formidable-looking mass—at a distance it resembled the ruins of some dismantled fortress; a close inspection proved it to be a formation of red sandstone rock, evidently the pinnacle around which, in an-

cient days, the mighty Pacific had boiled and surged; the restless waves had washed great caverns in the very heart of the rock, until they resembled the massive portals of some grim castle. So large were these openings, that into one of them I readily rode my horse. This formation is a silent witness of the fact that in days gone by the Pacific claimed all of this country as its own, and is almost the counterpart of the celebrated La Jolla caverns north of San Diego.

Seventy-seven miles from the summit, and 4 miles to the north of us, is the Dos Palmos stage station, upon the line of (Printed page 135) the Arizona mail route. At this place there are springs both saline and sulphurous, quite warm, and excellent to bathe in, but very poor as a beverage. Six miles further to the northeast of the stage road brings us to Brown's Gap.

The altitude is as yet undetermined, but, in approaching it from the direction of Dos Palmos, the indications are that a line could be obtained upon an unbroken, sustaining side hill. Ninety-four miles from the summit, and 4 or 5 miles to the south, we pass the mud volcanoes, 5 in number. They are found in eruption, alternately, and intermittently a cloud of white vapor like smoke rose out from their craters, and the constant deposit of material expelled forms, in time, miniature peaks from 30 to over one hundred feet in height. Want of time on my part precluded the possibility of a closer investigation of this subject.

Since leaving Cabajou valley, our line has been laid over a dreary, arid waste, not a vestige of either animal

or vegetable life; the soil either of a fine alkaline or sandy nature, cut by a drainage which looks in places formidable, but, when it is considered how dry and light the dust is, and that the whole surface of the country seems to slide like quicksand mixed with water, and at the slightest impediment washes for itself a new channel through the yielding material, a closer estimate of the requisite allowance necessary for proper drainage can be obtained. Across this desert there is no fresh water after leaving Cabajou, all of the springs strongly impregnated with salt or sulphur. In order to obtain a supply of fresh water, either artesian wells must be bored or a condenser used.

The water at Dos Palmos is used by both men and animals, and is much more palatable than that at Fink's Springs, which is exceedingly nauseous, but would probably sustain life.

As is seen by the profile, the line passes for a considerable distance below sea level. In addition, it evidently passes across the dry bed of a salt laguna which receives the surface drainage from a large scope of territory, without having any visible outlet. In seasons when there occurs an unusual rainfall, this basin is liable to fill up more or less. I inquired carefully into this matter, and from the best information I could obtain, I (Printed page 136) judge the limits of its rise to be within 5 feet vertical; certain it is, that the stage trail between Dos Palmos and Toros crosses it in the vicinity of the lowest portion, and has never yet been interfered with by overflow. Apart from this, however, it would probably be advantageous to locate the line from Cabajou Valley via Palma Soler,

Dos Palmos and Fink's Springs, clinging to the side hill, which is even and seems to invite and aim to maintain a level grade to connect with the line at the north end of the Sand Hill range at Sta. 6,000, which is a point we will have to make. This will throw out a rise and fall of 250 feet, but will increase the cost, curvature, and length of the line somewhat. After turning the point of the sand hills near Monmouth Tank, our line is laid almost direct to Yuma through a thick growth of palo verde, ironwood and mesquite, all dwarfed, bushy trees suitable for firewood.

In this neighborhood we also find an abundance of grass, which is quite green, and grows in tufts or bunches. This cattle eat with avidity. The formation of the ground is an almost level mesa of stony material—a natural ballast, firmly compacted. The drainage is very light and tends to the south; it seems to sink before reaching the sand hills, which block our course in that direction, rising to the proportions of a formidable-looking ridge, 150 feet high.

This valley will eventually make fine grazing land if a supply of water can be obtained. There is not a spring or well in it, save the two natural reservoirs, Monmouth and Nigger Tanks, which are situated near the base of the hills, and are simply accumulations of rain water, caught in the bottom of small scoured out ravines, and is entirely unreliable.

Some few years since the Government built a corral and started to sink a well about the center of this valley. The latter undertaking was abandoned at a depth of 30

feet without achieving any results. I am, however, sanguine that a good supply of artesian water can be had by sinking to a moderate depth.

The only obstacle we encountered between this valley and Fort Yuma was the descent from the mesa to the Colorado river bottom; this, however, was successfully accomplished by the use of a moderate grade, and crossing these alluvial flats (printed p. 137) we reached Yuma upon the morning of the 17th of December, 1872, having traversed 146 miles in 18 working days.

I take this opportunity of bearing testimony to the valuable assistance which I have received from my able assistants, Messrs. J. E. Jackson and John A. Evans, and to the uniform energy and cheerful activity displayed by the other members of the corps.

The difficulties with which we had to contend cannot well be overestimated, and can be only fully appreciated by persons familiar with the locality, or accustomed to desert travel.

I am, very respectfully yours,

JOS. U. CRAWFORD,

Assistant Engineer in Charge of Party.

The great features of the desert portion of Line D is its depression below the sea level; this can be avoided in the manner set forth in Mr. Crawford's report.

The crossing of the Colorado river at Yuma is common to this Line D, and the Otay Valley Line. The Colorado river, immediately after its confluence with the Gila, cuts through a projecting spur, which seems to leave an isolated butte on the right bank upon which Fort Yuma is established.

This butte is small in extent, affording just sufficient room for the garrison. Surrounding it on all sides, save that occupied by the channel of the river, is the alluvial bottom land of the Colorado; in season of freshets, it is, in fact, an island.

A line crossing the Colorado river bottom and approaching this elevation for the purpose of crossing the river at an elevation sufficient to dispense with the necessity of a drawbridge, could only do so by means of a long, high embankment, as the uniform level of the bottom land is maintained to the foot of the slope of the butte.

The only thing suitable for the high crossing would be a suspension bridge; the direction would be slightly oblique; the span 500 feet. The objection to a pier will be found in the character of the foundation and the cramped condition of the channel, and its shifting. The bridge site, being but a few feet from the confluence of the two rivers, the channel is some (Printed page 138) times on one side and sometimes on the other—dependent upon which of the rivers may at the time be swollen by a freshet.

As the crossing of the Colorado river cannot be considered fixed until the examinations east are completed, no soundings were taken at the crossing, but there seems to be a considerable depth of shifting material at the bottom of the river.

As before referred to, a crossing of the river better suited to our direction may be found higher up, and a considerable saving of distance be effected.

In concluding the summary for this line, it may be stated that all the available openings suitable for a railroad through the mountains have been examined. The conclusion is irresistible that the best approach from the eastward to the bay of San Diego is by way of the Gorgonio Pass and the canyon of Temecula creek.

On my arrival at San Diego, in August, 1872, the impression seemed to prevail among those familiar with the mountains east of here that a more favorable line could be had across the range by dropping into Mexican territory. So general did this opinion prevail that, during the visit of the president and yourself to this coast, the conclusion to examine it was arrived at.

Before placing a party on the line, which would have required in courtesy permission from the Mexican authorities, I resolved to make a reconnoissance of the country, to see if the route was promising, and to obtain such data in the way of altitudes and distances as would facilitate the labors of the party. As several examinations of this sort have been made during the progress of our labors here, I shall designate this as (Printed page 138).

RECONNOISSANCE OF THE TIA JUANA VALLEY AND TRIBUTARIES.

Starting from the initial point, the ground occupied by the examination is common with that of the Otay Valley Line to nearly the south line of the National Rancho, or where the line turns to the left into the valley of the Otay; from thence, continuing the southerly

course, passing La Punta, we enter the valley of Tia Juana; continuing up it 4 miles, we pass the national boundary still keeping in the valley of the Tia Juana (Printed page 139) to the mouth of the San Ysidoro, or North Branch. It will be recollected that our Otay Valley line crosses this same San Ysidoro some distance above. Following up the San Ysidoro for 4½ miles, we find a canyon or gorge.

From our initial point to the mouth of this canyon is 23 miles by the route traveled. A line 20 miles in length could be had by leaving La Punta to the right, crossing the Mesa, which would prove quite practicable. Indeed, a line of easy grades and light work could be had from the place of beginning to the entrance of this canyon. Altitude of valley at lower end of gorge, 214 feet, by barometer.

The distance through the canyon is estimated to be 2½ miles; altitude of upper opening of canyon, 445 feet. The difference in height can be overcome by a grade of 100 feet per mile; or, what would be better, the shorter or Mesa line could, at the cost of additional work, be kept up on the slope and a lower gradient used to overcome this elevation. Passing this gorge, the valley of the San Ysidoro opens out, having some extent of bottom land along the margin of the usually dry bed of the stream, for a distance of 5 miles, in which distance we pass out of the valley of the San Ysidoro, taking that of Tecate creek for better location.

The ascent of the valley for this distance of 5 miles is 103 feet; making the total altitude 548 feet. At this

point the valley of Tecate creek ceases and becomes a close canyon, continuing for 2¾ miles. The difference in altitude between the opening of the gorge and the upper end, 915 feet, or 333 feet per mile; total altitude, 1,463 feet. This elevation would have to be made by any line occupying the ground examined. Starting from the upper end of the canyon, with its elevation of 1,463 feet, running back toward the Bay of San Diego, with a gradient of 100 feet per mile, would require a distance of 14 63-100 miles, which would take us back to where the line would leave the Mesa, somewhere near the crossing of Otay creek. I doubt much if sustaining ground could be had for such a gradient. Certain it is that the work would be very heavy, caused by the broken character of the slopes.

This canyon of Tecate may be considered one of the controlling points on this route. From the head of this gorge to near (Page 140) the head of San Jose Valley, an affluent of the Tecate, the distance is estimated at 12½ miles; difference in elevation, 1,482 feet, requiring a grade of 118 feet per mile. This profile would be broken, the work very heavy, as it would be necessary to cling to the lateral slopes for the entire distance.

From the head of San Jose Valley to the summit of the divide, an estimated distance of 18 miles, no difficulties occur. The elevation of summit is 3,580 feet. From thence this line would pass through a depression leading into the Carriso canyon, connecting with the Otay valley line at the head of it.

A line over the ground examined would have no advantage over the Otay Valley line in point of cost—the

only superiority would be the saving of 290 feet in the summit.

If the country covered by this reconnoissance was under the jurisdiction of our Government, and if the question of route lay between the Otay Valley line and this, it would be well to give the ground passed over a more thorough examination.

It is estimated that no saving in distance would be effected by this line over the Otay Valley line.

Table of Distance and Elevation.

Initial Point, San Diego.....	miles	16.3	feet.
Crossing of Otay creek.....10	"	25.	"
Barber's Rancho, Tia Juana Valley.. 4	"	80.	"
Bendenas, Mouth of San Ysidoro... 5	"	160.	"
Canyon San Ysidoro (lower end).... 4	"	214.	"
Canyon San Ysidoro (upper end) 2½	"	445.	"
Canyon of Tecate Creek (lower end). 5	"	548.	"
Canyon of Tecate Creek (upper end). 2¾	"	1,463.	"
Head of San Jose Valley.....12½	"	2,945.	"
Summit of Divide.....15¼	"	3,580.	"
Head of Carriso Canyon.....14¼	"	2,638.	"

75¼ miles.

In the examination of railway lines looking to the bay of San Diego as a terminus, more or less attention has been given to the route via Warner's Pass. In the matter of actual distance, a line connecting San Diego with the Colorado river at (Printed page 141) or near Fort Yuma, via this pass, would rank midway between the Otay Valley line and the line via San Gorgonio Pass.

The approach to Warner's Pass from the desert has not been looked upon with favor by engineers who have examined it. (Vide Report of Col. R. S. Williamson, Pacific Railroad Reports, and also A. B. Grey, Civil Engineer.)

The only favorable report I am aware of is that of Mr. Chas. H. Poole, made to the San Diego and Gila, Southern Pacific and Atlantic Railroad Company. I have so far been unable to find a copy of the reports in extenso. In Senate Document No. 5, Session 1856, incorporated into the report of the surveyor general of the State of California, we find a reference to this report, and a short summary of it, with tables of grades and altitudes, over the signature of Mr. Poole, who at that time was deputy surveyor of San Diego county. I copy a part of the table:

	Intermediate Distance Miles.	Total Distance Miles.	Altitude Feet.
Bay of San Diego, Capitan Grande, Indian Village	32 3-10		727 66-100
Summit of San Isabel	18 87-100	51.17	3,360
San Jose Valley	3.44	54.61	2,768
Warner's Summit	9.27	63.88	3,630
San Felip	10.82	74.70	2,455
Entrance of Canyon	8.05	82.75	2,638
Great Lagoon	51.75	134.50	70
Mouth of Gila	66.00	200.05	180

The manner of making the examination, which I believe was instrumental, seems to have been a line run in the lowest part of the several valleys, viz., up the valley

of San Diego river to the mouth of Oakwood canyon, up that drainage to the secondary summit of Santa Isabel. In the table, of which the foregoing is an abstract, actual grades are given of 171 feet, 181 feet, 254 feet, and 452 feet per mile on the western slope; from the information thus obtained a deduced grade of best observed location is obtained of 107 feet permile. The secondary summit of Santa Isabel, which separates the drainage of the San Diego river from that of Warner's Pass, which flows into the San Luis Rey river, and the San *Bernardo* is a controlling point as (Printed page 142) to grade, assuming that the summit can be lowered by cutting 40 feet, making the elevation of grade 3,320 feet; a gradient of 100 feet per mile would have its footing some 6 or 7 miles down the Indian Village of Capitan Grande, and would require to be continuous for 26 or 27 miles. As this would be side-hill work for the entire distance, and over broken slopes cut up by deep lateral ravines, they would be in character similar to that on the Otay Valley Line.

It is quite evident from Mr. Poole's table and corroborated by our own examinations that the natural approach to Warner's Pass is not by the drainage of the San Diego river, but rather by the San Luis Rey.

The summit of Warner's Pass is given by Mr. Poole as 3,629.56 feet. Colonel Williamson gives the altitude as 3,780, which nearly agrees with our observations in the vicinity. As the latter are barometric and the former supposed to be obtained by actual survey, it is presumed to be the most correct.

A line via the San Diego river and Warner's Pass would give a greater amount of elevation and depression than our Otay Valley line, caused by the Santa Isabel summit on the western slope, and the San Felip summit on the eastern, both of which are additional and unavoidable. Reports having reached me of a summit north and east of Warner's Pass, which promised an opening to the desert, I instructed Mr. A. P. Wood, principal assistant engineer, to examine it and take with him a guide who, from having lived in the vicinity, was supposed to have an accurate knowledge of the country. Mr. Wood's report is submitted. It will be gathered from it that the proper and natural outlet to the coast from Warner's Pass, and also the pass which he examined, is via the drainage of the San Luis Rey river, which would dispense with all secondary summits and give a continuous descent from the summit to the sea.

J. A. Evans, Eng'r Cal. Div. T. & P. Railway.

Dear Sir: I herewith submit a report of an examination made by me, according to your orders of Oct. 20th, 1872, of a pass in the Sierra Nevada mountains, situated at the head of (Printed page 143) the San Luis Rey river, and about 2 miles north and 5 miles east of Warner's Pass; also of the country east of the pass leading down to the desert, and from the same point westward, down the valley of the San Luis Rey river to the ocean, with a view of ascertaining its practicability as a railroad route.

I reached the neighborhood of the pass on Oct. 28th, accompanied by John Warner, as guide. The pass is a

gap from 3 to 4 miles wide, the mountains rising abruptly on either side. The surface of the country is smooth, gradually ascending from the west to the summit, where I found, by barometric observation, the elevation to be 3,900 feet. At the north of the pass the descent eastward is, in many places, precipitous. By an observation, taken on an arm of the desert, I found the fall to be 3,000 feet in a distance of 7 miles.

On the north side the pass leads into a canyon, which I followed to where its drainage enters San Felip creek at the lower end of San Felip canyon. The distance from the summit of the pass to this point we estimated to be 10½ miles. The descent in the first 2½ miles from the summit is 710 feet; in the next 3 miles it is 775 feet; and from thence, for a distance of 5 miles, 130 feet per mile or 650 feet. This rapid descent of the canyon would necessitate keeping a line on the side of the mountain. On the side of the mountain separating this canyon from the San Felip Valley, I think sustaining ground can be found for a line of practicable grades and curves.

Though I am of the opinion that a grade of 116 feet per mile from the summit would necessitate crossing a low place in the mountains into the valley of the San Felip, and to get out of this valley with a line of the same grade, a line would have to follow the mountains back in the direction of Warner's Pass for some distance, and thence bear south and east along the mountains on the south side of the valley.

This would involve a great amount of curvature, and the work would be of a very heavy character, as the sides

of the mountains are cut up by deep, lateral canyons and sharp spurs composed of solid rock. The surface of the country is covered with granite rock, which appears to be rapidly disintegrating. There is scarcely any growth of vegetation here.

(Printed page 144.)

From the summit of the pass, westward, down the valley of the San Luis Rey, I found an entirely different country. According to barometric observation, the descent does not exceed 100 feet per mile for any part of the first 15 miles from the summit west. The country is a smooth valley, varying in width from ¾ to 3 miles, and well watered.

At this point the stream leaves the valley of Warner's Pass, and enters San Jose Canyon. In a distance of 16 to 18 miles, this canyon descends 1,720 feet. The sides of the mountain to the south of the stream is comparatively smooth and favorable for the construction of a railroad.

After leaving the canyon there are no difficulties in the way between that point and the ocean, as a line would follow the valley of the San Luis Rey. Good alignment can be had from the summit to the ocean. The course of the stream is from east to west, and it is comparatively free from sharp angles.

There is a good supply of timber for fuel—not for other purposes—on the sides of the mountains, from the summit to the mouth of San Jose canyon, and an abundant supply of good water from the summit, west. I found a few springs of pure water on the desert side,

though I doubt the supply being sufficient for railroad purposes.

Respectfully yours, etc.,

A. P. WOOD,
Prin. Asst. Engr.

It would seem from the examinations of Mr. Wood, that the pass, north and east of Warner's Pass, is less advantageous than Warner's, as in making the descent from it towards the desert it would be necessary to make the detour back into the valley of the upper San Felip and surmount the secondary summit between the drainage of San Felip and the Carisso. It would seem, by comparing authorities, that the summit is higher than that of Warner's Pass. It is presumed, further, that the line indicated by Mr. Poole would exceed in elevation and depression, as well as in distance and grade, the Otay Valley line; it need not, therefore, be used in a comparison with our northern lines, via San Gorgonio Pass.

(Printed page No. 145.)

The openings or passes in the range east of San Diego, may be summarized as follows:

Name of Pass.	Altitude. Feet.	Natural Approach to.
1. San Gorgonio	2,521	Coast Line, Temecula Canyon, and Potrero of San Jacinto.
2. Warner's Pass	3,630	Coast Line and San Luis Rey Valley.
3. Pass near Warner's	3,900	Coast Line and San Luis Rey Valley.

4. Volcan Pass	3,850	San Diego river and Trib.
5. Head of Pine Valley	4,700	Otay creek, Cottonwood Val.
6. Walker's Summit	3,870	Otay Creek, Bear Canyon, and Melquate Creek.
7. Los Huntos' Summit, Mexico	3,580	Tia Juana Valley, San Ysidoro and Tecate creek.

The impracticability of the summits 4 and 5 consists largely in the difficulty in reaching the desert, the direction of the descent being directly east, and not parallel with the direction of the range, as is the case with the approach to Warner's Pass and Walker's summit.

Terminus of San Diego.

The Texas and Pacific Railway Company has acquired title to two leagues of land, in the vicinity of the bay, 700 acres of which lies in a compact body, contiguous to the best and most accessible part of the ship channel on the eastern shore of the bay. This tract is conveniently situated for the location of depots and shops, requiring little or no grading for that purpose.

By reference to the map it will be seen that a spur line from our Line D, diverging near Old San Diego, would make available for business the basin inside of Ballast Point, and in front of La Plaqua. This spur will cost but little to grade, and if required, dockage could be

made there with little expense, so as to place cars within reach of ship tackles.

It may be mentioned, as one of the advantages of the northern line, that all approaches to it from any point of the bay will prove to be simply extension of line, as opposed to lengthy detours.

In conclusion, I beg to refer to the valuable aid received from Mr. A. P. Wood, principal assistant, upon whom has devolved most of the labor of preparing the estimates, and to Mr. J. U. Crawford, by whom much of the labor of developing the line via Gorgonio Pass was performed. (Printed page No. 146.) That we are able to give results so soon is due in no small degree to the activity displayed by him in his allotted part of the work, and to Mr. C. J. Fox, who also developed some of the most important lines leading to San Gorgonio. Mr. Fox's labors were conducted with great care, and whatever part of them may be adopted, much labor will be saved in future location.

To Mr. J. H. Reno, upon whom devolved the most difficult and discouraging part of our surveys, much credit is due. In the month of July, 1872, he managed to keep the party together under difficult circumstances, although not then in full charge of it.

From Mr. C. P. Taggart, to whom I was referred to for advice in all legal matters, I have received valuable assistance and counsel.

Respectfully submitted,

JAMES A. EVANS,

Engr. Cal. Div.

Q. The Southern Pacific Railroad Company from Yuma up to San Gorgonio was built upon your line, I believe?

A. I have no knowledge upon that subject.

Q. Your company furnished the Southern Pacific with your engineer's report, your maps and the data showing your lines; did it not? A. No, sir.

Q. You say that this annual report of the president on behalf of the board of directors was approved by the stockholders. To what report do you refer? I am asking now particularly about the report of 1875, from which I have offered extracts in evidence.

A. What is your question?

Q. What do your records show about the acceptance and approval of the report of the president, Thomas A. Scott, on behalf of the directors to the stockholders for 1875?

A. The minutes of the proceedings at the stockholders' meeting held August 10th, 1875, show: "The annual report of the board of directors, showing in detail the operations of the company and its officers for the year ending May 31st, 1875, was then submitted by the vice-president, and on motion duly seconded, it was 'Resolved that the fourth annual report of the board of directors be, and the same is hereby, accepted by this meeting; that it be placed on file in the archives of the company, and

Be it further resolved, that the action of the officers and directors of the company, as set forth in the report, be, and the same is hereby, ratified, adopted, and confirmed as the action of the stockholders.' "

Q. You read that from the record?

A. I read that from the minutes of the meeting.

Q. Do you also say that the record also shows that the fifth, sixth, and seventh annual reports were likewise ratified, adopted, and confirmed?

A. Yes; by the stockholders.

Mr. CALL.—I offer in evidence, from the third annual report of the president, on behalf of the board of directors, to the stockholders, the following:

(The Title Page:) "Third Annual Report of the Board of Directors of the Texas & Pacific Railway Company to the Stockholders, August 11th, 1874; and Supplemental Report, March 29th, 1875"—printed together in one book.

I also offer in evidence, on page 5, the following:

"Third Annual Report of the Texas & Pacific Railway Company, New York, August 11th, 1874, to the Stockholders of the Texas & Pacific Railway Company."

"Gentlemen." . . . .

I also offer, on page 9, the following:

"The Report of General G. M. Dodge, Chief Engineer, gives detailed tables and elevations, gradients, and distances and to it you are referred for much valuable information. It states, briefly, that the divide of the continent is crossed at an elevation of 4,893 feet, on very light grades, not exceeding 66 feet to the mile, while on the entire line the total length of grade from 80 to 105 feet, will not exceed 45 miles, and from 66 to 80 feet, 72 miles."

I also offer, on page 12, the following:

"California Division.—Distance 444 4-10 miles. This division will command the business up and down the Pacific, and will connect with the Southern Pacific Rail-

road of California at San Gorgonio Pass, giving a direct route to San Francisco."

I also offer in evidence, on page 16, the signature, as follows:

"By order of the Board.

Thomas A. Scott, President."

By Mr. CALL.—Q. Was this report also accepted and confirmed?

A. The only record that I find in reference to that is a record of a meeting of stockholders held March 29th, 1875:

"The annual report of the president, showing the operations of the company for the thirteen months ending May 31, 1874, together with a supplemental report covering an act of Congress passed June 22nd, 1874, authorizing the company to change its mortgages, and a proposed plan for readjusting the mortgage debt of the company; also covering certain acts passed by the Texas legislature, giving the company further time in which to complete its road; also reporting the purchase of certain property and franchises from the receiver and trustees of the Memphis, El Paso & Pacific R. R. Company bondholders; and also reporting the terms agreed upon with the Cal. & Texas Ry. Construction Co. for canceling the construction contract heretofore made and existing under date of Aug. 6th, 1873, with that company, and for a full and final settlement of all claims and demands in any manner arising out of said contract, all of which were submitted to the meeting. Whereupon, on motion, it was unanimously resolved that the annual report of the president of the company, together with his supple-

mental report be, and the same are hereby, accepted and ordered to be placed on file, and the action of the president and board of directors as therein stated be, and the same are hereby, ratified, adopted, and confirmed as the acts of the stockholders of this company."

Q. Will you kindly look at this third annual report, which seems to contain a report and supplemental report, and state whether both of them are printed together as one book?

A. It appears to be printed as one pamphlet. The report is dated August 11th, 1874, and the supplemental report is March 29th, 1875.

Q. That part of it which contains the supplemental report relates to what?

A. It relates to the acts of Congress.

Q. Then that is what is referred to in the acceptance by the stockholders, is it not?

A. It appears to be.

Cross-Examination.

Mr. PAYSON.—The defendants offer in evidence the last paragraph of the report of Gen. G. M. Dodge, dated May 10th, 1873, headed "California & Texas Railway C. Company," being the same document a portion of which was offered by Mr. Call.

Said paragraph now offered reading as follows:

"Since July, 1872, over 8,000 miles of instrumental lines have been run, 15,000 miles of reconnoissance made; and this through a country infested by hostile Indians, and although our parties have been attacked, our men killed and scalped, no delay has occurred in work or sur-

veys. We have developed a country 1500 miles long east and west and 150 miles in width, north and south—so thoroughly developed, that we are now able to very nearly determine the line for location from Red river to the Pacific."

Will you please give the date of the sixth annual report from the bound volume which you hold in your hand? A. August 14th, 1877.

Q. Will you please look at the pamphlet which I now show you, purporting to be the sixth annual report of the board of directors of the Texas & Pacific Railway Company to the stockholders of that company, dated August 14th, 1877, with the map facing the title-page thereof (exhibiting the pamphlet to the witness), and state whether it, and the map facing the title-page, is the official report for that year?

A. Yes, sir; it is.

Mr. PAYSON.—For the purpose of identification, I will ask the witness to write his name upon the outside of the map, facing the title-page of the report.

The WITNESS.—This is the 6th annual report, and I have written my name on the outside of the map and on the title page of the report, as requested.

(Mr. Payson, on behalf of the defendants, also requests the commissioner to write his name under the signature of Mr. Satterlee, in the two places indicated above, for the purpose of more fully identifying the paper, which was accordingly done.)

C. E. SATTERLEE.

Subscribed and sworn to before me this 28th day of December, A. D. 1896, as to direct and cross-examination herein before set forth.

WM. HERBERT SMITH,
Special Examiner and Stenographer.

And thereupon the further taking of these depositions was adjourned by consent until Saturday, November 21st, A. D. 1896, at 2 o'clock P. M., at the rooms of J. H. Call, special assistant attorney for the United States, at the National Hotel, in the city of Washington and District of Columbia.

Washington, D. C., November 21, 1896.
2 o'clock P. M.

Met pursuant to adjournment, at the room of J. H. Call, at the National Hotel, in the city of Washington, at 2 o'clock P. M., on the 21st day of November, A. D. 1896, there being present Joseph H. Call, assistant United States attorney, and the witness, John T. Granger.

No appearance being made by the defendants or their counsel, after waiting for the attorney for the defendants until the hour of 3:15 o'clock P. M., on the same day, at the same place, the following proceedings were had:

JOHN T. GRANGER, a witness of lawful age, called by and on behalf of the complainant, having been first duly sworn, is examined:

By Mr. CALL.—Q. What is your full name?

A. John T. Granger.

Q. Where do you reside?

A. At No. 1441 Rhode Island avenue, Washington, D. C.

Q. Are you acquainted with Gen. G. M. Dodge?

A. I am.

Q. How long have you known him?

A. For 24 years and over.

Q. Were you acquainted with him during the years 1873 and 1874? A. I was.

Q. What relation, if any, did you have with him at that time? A. I was his private secretary.

Q. What business or occupation was Gen. Dodge engaged in during those years?

A. Gen. Dodge at that time was chief engineer of the California and Texas Railway Construction Company.

Q. What position did he hold in the Texas & Pacific Railway Company?

A. None. He was not connected with the Texas & Pacific. The two corporations were kept entirely separate and distinct.

Q. What were the relations of the Construction Company to the Texas & Pacific Railway Company?

A. The Construction Company contracted to build the railway of the Texas & Pacific Railway Company, commencing really at Shreveport, Louisiana; that is, they rebuilt the old Texas & Pacific road from Shreveport, Louisiana, to a place called Hallsville, in Texas, and thence westward towards California, and also from Marshall, Texas, northward through Jefferson and Texarkana, to Sherman, Texas.

Q. In speaking of the California line, you refer to the line described in the act of Congress of March 3, 1871, for

the construction of a railroad from Texas westward to San Francisco? A. Yes; that is right.

Q. Who had charge of the surveys on that line for the railroad company, or for the construction company?

A. For the construction company, Gen. Dodge, had entire charge of surveys.

Q. The construction company had charge of it under the railroad company?

A. Simply as contractor and contractee. The railway company had no engineers in the field. The construction company was to do it all, to do the entire work of locating, surveying, and constructing the road over the best lines that they could find between the points named —that is, between Marshall, Texas, and San Diego.

Q. Please go on and state, if you know, what was done in the way of locating the line of railroad from Marshall, Texas, to San Diego.

A. A very large body of engineers was put into the field, and they were distributed over the entire line. Surveys were made, and the line located over the entire distance from Marshall to San Diego.

Q. Were you acquainted with James A. Evans?

A. I was intimately acquainted with him.

Q. What relation did he have at that time, and during those years, if any, in the matter of surveying for the construction company?

A. He was one of what we called the division engineers.

Q. Under Gen. Dodge?

A. Under Gen. Dodge.

Q. Did you know Joseph U. Crawford?

A. I did.

Q. What connection did he have with those surveys, if any?

A. My recollection is that he was the chief assistant of Mr. Evans. He was employed under Mr. Evans for a long time, and did a great deal of work on the California end of the line.

Q. Did they report to Gen. Dodge, showing the progress of their work?

A. They did, fully, from time to time.

Q. I have requested you to produce, if you have it, a copy of the report of 1874, made by Gen. Dodge to the railway company. Have you that report?

A. I have. I now produce it.

Q. When was that report made?

A. On or about May, 1874.

Q. Was that report printed at that time under the supervision and direction of Gen. Dodge?

A. Under his persnoal supervision and direction.

Q. What part, if any, did you have in preparing that report?

A. I was the general's secretary, and had charge of the reports of the division engineers as they came in. I compiled the book, and the original copy of it was in my handwriting.

Q. This printed report which you have here contains the reports of Mr. James A. Evans and Mr. Joseph U. Crawford. Did the original report also contain those reports as therein shown?

A. It did. It contained everything that is within the covers of this book.

Q. What was done with the report, with the accompanying report, when it was finished by Gen. Dodge?

A. It was transmitted to the president of the Texas & Pacific Railway Company—Col. Thomas A. Scott, at Philadelphia.

Q. And was then printed?

A. Yes; it was then printed.

Q. Is this a copy of that report? A. It is.

Q. Has that report been in your possession, or in the possession of Col. Scott, since it was made?

A. Do you refer to the original?

Q. To the printed copy of the report.

A. Quite a number of these copies were printed, and either this or other copies have been in Gen. Dodge's office, with which I was connected.

Q. They were all a part of the same print?

A. All a part of the same print; the same thing. This identical copy has been either in Gen. Dodge's possession or in my possession ever since it was printed. The others were in pamphlet form. I think this is the only one that was bound in boards.

Q. Have you ever been over the line of the Texas & Pacific Railway Company from Marshall, Texas, to San Diego, described in this report?

A. I have not.

Q. Have you ever been to San Diego? A. No.

Q. Was Gen. Dodge, chief engineer of the construction company, engaged in making these surveys on behalf of the Texas & Pacific Railway Company during the whole of the years 1873 and 1874? A. Yes, sir.

Q. Did he also act in that capacity during the year 1875?

A. I cannot say when he resigned his position as chief engineer. It is so long ago that I cannot recall just when it was; but I believe it was considerably later than 1875. I could not swear to it, however.

Mr. CALL.—I offer in evidence from the printed report, entitled "Texas and Pacific Railway Company, Report of Gen. G. M. Dodge, Chief Engineer, 1874," the title and pages 3 to 12, inclusive, down to the words, "in addition to the main line from Shreveport to San Diego," as follows:

TEXAS AND PACIFIC RAILWAY COMPANY.

Report
of
Gen. G. M. Dodge,
Chief Engineer.
1874.
New York.
Geo. W. Wheat, Fine Mercantile Printer,
109 Nassau Street,
1880.

(Printed page 3.)

Report
of
Gen. G. M. Dodge,
Chief Engineer,
Texas and Pacific Railway Company.

Chief Engineer's Office,
Marshall, Texas, May, 1874.

Col. Thomas A. Scott, President Texas and Pacific Railway.

Sir: The charter of the Texas and Pacific Railway Company, as granted by the United States, provides for the construction of a continuous railroad and telegraph line from Shreveport, Louisiana, by Marshall, Harrison county, Texas; thence by the most direct and eligible route to be determined by the company, near the thirty-second parallel of north latitude, to a point at or near El Paso; thence by the most direct and eligible route, to be selected by said company, through New Mexico and Arizona to a point on the Rio Colorado, at or near the southeastern boundary of the State of California; thence by the most direct and eligible route to San Diego, California, to Ship's Channel, in the State of California, pursuing in the location thereof, as near as may be practicable, the thirty-second parallel of north latitude.

(Printed page 4.)

This charter also provides for the construction of a railroad from Fort Yuma to San Francisco, not limiting us from taking the most economical advantages of the topography of the country in leaving our main line.

It requires that one hundred miles each year shall be completed from its eastern terminus, and ten miles from its western terminus by May, 1874, and after that twenty-five miles per year from its western terminus, until the two lines meet. The rate at which the line is to built from its eastern end is materially modified by its charter in Texas, which is more fully explained in a subsequent part of this report.

As far as possible, we consider the question connected with the construction of the road, as follows:

First.—Location of lines.

Second.—Connections.

Third.—Water supply.

Fourth.—Timber.

Fifth.—Fuel.

Sixth.—Ballast.

Seventh.—Building stone.

Eighth.—Agricultural resources.

Ninth.—Mineral resources.

Tenth.—Land and town lots.

Eleventh.—Earnings.

Twelfth.—Commercial and military value.

You will also find, in a condensed form, estimates of cost of construction and equipments; table of grades, summits and distances, and comparison with other transcontinental lines. Annexed will be found reports of engineers in charge of the different divisions, with copies of the instructions under which they acted:

Divisions.

For Surveys and Construction.—The whole line was divided into five divisions:

1. Construction East of Fort Worth.—In charge of Capt. R. S. Hayes.

2. Brazos division. From Fort Worth to a point a little (printed page 5) west of the one hundredth meridian and south of Double mountain. In charge of Messrs. Hodges, Wilson and O'Neill.

3. The Pecos division.—From the Brazos division to Fort Bliss, or El Paso, on the Rio Grande, in charge, first, of Mr. E. D. Muhlenburg, and finally in charge of Maj. M. F. Hurd.

4. New Mexico division.—From the Rio Grande to the Pima villages, on the Rio Gila, in charge of Mr. George Wolcott.

5. California division. From the Pima villages to San Diego, California, in charge of Mr. J. A. Evans.

Extent of Surveys.

To develop the country in detail on or in the vicinity of the thirty-second parallel of latitude, a belt of country 200 miles wide and 1900 miles long was thoroughly explored, 10,000 miles of instrumental line run, and 15,000 miles of reconnoissance made, from July 1st, 1872, to January 1st, 1874, at a cost of $500,000.

For the detailed information as to the line, I refer you to the report attached hereto.

Road in Texas.

In the State of Texas, three divisions of the Texas and Pacific Railway have been placed under construction:

1. Southern division, Shreveport to Fort Worth, 219 miles.

2. Transcontinental division, Texarkana to Fort Worth, 236 miles.

3. Jefferson division, Marshall to Texarkana, 69 miles.

Texas Charter.

The charter granted by the State of Texas requires the completion of the road:

1. From Marshall to Texarkana, its junction with the St. Louis, Iron mountain and Southern Railway, by January 1st, 1874.

(Printed page 6.)

2. From Texarkana to Sherman, Transcontinental division, and from Longview to Fort Worth, on Southern division, by July 1st, 1874.

3. From Sherman to Fort Worth, Transcontinental division, by January 1st, 1875.

In July, 1872, when the present company entered upon the work, the road was in operation from Shreveport to Longview, a distance of 66 miles.

The company not only intended to build a railroad to the Pacific, developing the country adjacent to the thirty-second parallel of latitude, but to construct its eastern divisions—that is, two lines diverging from Fort Worth to the east. It would connect the Pacific coast and the territories through which the line passed with the manufacturing and commercial centers of the north, east and south, by the shortest, most direct and practicable route.

By them we reached St. Louis from Fort Worth, via the Transcontinental division and the St. Louis, Iron mountain and Southern Railway, in 745 miles; Chicago by same route, to Poplar Bluff; thence by Cairo and Illinois Central Railroad, in 998½ miles. To New York, via Sherman, Texarkana, Little Rock, Memphis, Louisville, Cincinnati, and Pittsburgh, 1756 miles, or to New York via Shreveport and North Louisiana Railway to Vicksburg, and thence by Central Southern lines to New York, 1653 miles. By same route to Richmond, Virginia, 1386 miles,

and to Washington, D. C., 1468 miles. To Galveston by Dallas and the Texas Central Railroad, 345 miles, or via Minneola to the Great Northern Railroad, 399 miles, and to New Orleans, by Shreveport and Red river, or via Shreveport, Vicksburg and Mississippi river, or via contemplated route through Louisiana, via Marshall, Donaldsonville and Vermillion.

The Jefferson division, from Marshall to Texarkana, with its connections, also gives a direct route from Galveston, Houston, San Antonio, Austin and southeastern Texas, via the International and Great Northern, to the north and northwest, distance from Galveston to St. Louis, 875 miles.

In addition to these advantages, the three divisions, forming the three sides of a triangle, with its least angle at Fort Worth, develops the richest and best settled portions of north Texas, a country heretofore without transportation facilities, but (printed page 7) abounding in everything required for a numerous and wealthy population.

Construction.

The original charter from the State of Texas required that we should complete the whole road to Fort Worth by January 1st, 1874, and the efforts upon the part of the company to comply with the charter, and complete over 500 miles of road within one year, required an enormous expenditure of money.

The three divisions east of Fort Worth, 525 miles, was estimated to cost $12,363,129, and was under charge of Capt. R. S. Hayes, as engineer in charge of construction,

Mr. J. M. Eddy, assistant superintendent, being in charge of transportation, supplies, and material.

The report of Capt. Hayes is herewith submitted, giving full details of the work from August, 1872, to February 1st, 1874.

Completed Road.

Southern division, Longview to Dallas, 124 miles.

Jefferson division, Sherman to Texarkana, 74 miles.

Transcontinental division, Sherman to Brookston, 58 miles.

256 miles have been completed and accepted by the State of Texas and by the United States as a first-class road, complying with all the requirements of the charter and laws of Texas, and with the acts of Congress.

107 miles additional have been graded, tied, and bridged, ready for the iron, and in addition to this, 66 miles of road have been partially rebuilt; ties, bridges, buildings, depots and tanks renewed, and the gauge changed from 5 feet 6 inches to 4 feet 8½ inches.

Over $9,000,000 have been disbursed in completing this work, without any loss to the company, and within the amount of the estimate first submitted, although they did not then contemplate the extraordinary outlays rendered necessary by the lack of navigation in Red river, or the delay of the completion of the connecting roads, the epizootic, and finally the yellow fever, which quarantined us for ninety days.

This large expenditure of money in so limited a time, forced upon us by the State legislature, rendered the undertaking a (printed page 8) difficult and serious one.

Up to the time of the financial panic, our organization and progress had assured us that we would be able to comply with the requirements of our charter.

Had we been in railroad communication with St. Louis and Galveston in the fall of 1872, as was promised, instead of the spring of 1873, or could we have relied upon the navigation of Red river, as we had a right to expect from the experience of former years, say from November, 1872, to March, 1873, our line would have been completed to Dallas and Sherman by January, 1874, and our construction well advanced from Dallas to Fort Worth. Notwithstanding these drawbacks, we built more railroad during the year than any other company in the United States.

The three divisions, as soon as completed, will earn at least $5,000 per mile per annum, and as the country fills up the earnings will gradually and permanently increase.

The eastern part of the State, through which the line runs, is heavily timbered with pine, oak, and cypress. The western portion is prairie. The local demand for lumber in the west, the return transportation of cattle, cotton, and grain east, and the passenger traffic over it in every direction, covering, as it does by its connections, the whole of the thickly settled portion of Texas, will give this part of the line, when completed and equipped, a very large, remunerative, and increasing trade. The completed road is a first-class, new railroad, substantial in all its parts, and fully equal to any of the roads of the western States.

The bridges, shops, water stations, and depot buildings

are ample and substantial, far exceeding its present wants. The equipment is new and from the best shops.

To complete it to Fort Worth, as required by law, it will be necessary to lay track, erect water stations and buildings on the graded, tied and bridged portion of the transcontinental division from Texarkana to Brookston, a distance of 94 miles, by July 1st, 1874, and the building of 27 miles of new line from Dallas to Fort Worth by July 1st, 1874; also the construction of the line from Sherman to Fort Worth by January 1st, 1875, distance 81 miles, and thereafter each year not less than 100 miles on the Texas end, and 25 miles on the California end of the line each year until completed across the continent.

(Printed page 9.)

There is now before the legislature of Texas a bill granting all roads one year's extension of time. Should it pass, it will add an additional year to the time above stated.

In the fall of 1873, in accordance with the law of the United States, work was commenced at San Diego, California, under the supervision of Mr. James A. Evans, division engineer, ten miles of work was let; at this time the grading, bridging, and tieing is nearly completed. This work is still progressing, and we hope within the next ninety days to have it ironed and equipped.

Nearly all of our arrangements, right of way matters, real estate, etc., at San Diego, have been satisfactorily settled, and work should be commenced as soon as practicable in the tunnel upon the next section of 35 miles. To work this tunnel economically, we should have at least twelve months in which to complete it.

Description of Adopted Line.

The Texas and Pacific Railway will extend from Shreveport, Louisiana, on Red river, to San Diego, California, with a branch from Marshall, Texas, to Texarkana, there connecting with the St. Louis, Iron mountain and Southern Railway, and from Texarkana through Paris and Sherman, connecting with the main line at Fort Worth.

Over this route the surveys have determined that in an engineering and commercial point of view, the line to be adopted is as follows:

Leaving Shreveport, the road runs almost due west through Caddo Parish, Louisiana, and through the counties of Harrison, Gregg, Upshur, Wood, Smith, Van Zandt, Kaufman, Dallas and Tarrant, in Texas, passing through the towns of Marshall, Hallville, Longview, Willow Springs, Glade Water, Hawkins, Minneola, Saline, Wells Point, Elmo, Terrell, Forney, Mesquite and Dallas, to Fort Worth, at the junction of the West and Clear forks of Trinity river, in Tarrant county.

This line crosses the divide between Red river and Sabine river, and runs up the valley of the Sabine, crossing it in Van Zandt county, crossing the Trinity river at Dallas, following the west fork of the Trinity to Fort Worth, distance 219 miles.

(Printed page 10.)

Fort Worth to San Diego. Commencing at Fort Worth, the line follows the valley of the Clear fork of the Trinity in a southwesterly direction to the mouth of South fork, and up the valley of South fork to its head; passing

through Weatherford, the county seat of Parker county, and thence northwest, crossing the headwaters of numerous tributaries of the Brazos, passing into Palo Pinto county about four miles from the northeast corner. It then turns a little south of west and crosses the Brazos river near the mouth of Cedar creek, and follows up the valley of Veal's creek, and across the divide into the valley of the Clear fork of the Brazos, and then following the general course of the Clear fork to the southeast extremity of the big bend of the Clear fork, about four miles southeast of Fort Griffin; thence following up the valley of Trout creek to its head and down one of the tributaries of Clear fork, it crosses Clear fork about four miles south of the north line of Shackleford county; thence almost due west, crossing California creek on the west line of the same county, and following its valley to its head, and thence in a direct line southwest, on the divide between the waters of Clear and Double mountain forks of the Brazos to a point 18 miles south of the Double mountains, a distance of 210 miles.

From this point the line runs a little south of west, crossing the headwaters of the North fork of the Colorado, and between Muchaque and Solitaire mountains to Sulphur Springs—latitude 33.30, longitude, 101.45 W. on the east border of the Staked Plains, a distance of 75 miles—thence southwest, crossing the Staked Plains to the Rio Pecos, crossing this river about 15 miles above the mouth of Toyah creek, and 54 miles below the mouth of Delaware creek, 119 miles; thence a little south of west in a very direct line to the newly-discovered pass in

the Guadaloupe mountains, known as Hurd's Pass—latitude 32.30, longitude, 104.30 W.—62 miles. This pass is about 40 miles southeast of the Guadaloupe Pass; thence northwest and parallel to the Guadaloupe range, 48 miles, to a point in Salt Lake Valley, 25 miles southwest of Guadaloupe Pass; thence almost due west, crossing the Heuca mountains, through a low pass to Fort Bliss, on the Rio Grande.

(Printed page 11.)

From there the line follows up the valley of the Rio Grande for a distance of 38 miles to near the town of Mesilla, then turning almost due west ascends to the tablelands of the Sierra Madre, which is reached in a distance of 6 miles, and on the same course, crossing the high rolling prairie of the Sierra Madre, it passes through the Florida Pass, between Fort Cummings and the Florida mountains, into the valley of the Miembres, crossing that river about 12 miles south of Ojo de Vaca (Cow Springs), and about 35 miles south of Fort Bayard, Silver City and the Lone mountain mining district.

We leave the Burro mountains on the north, the Pyramid range on the south, and passing near the Ralston silver mines we reach the valley of Playas, 125 miles west from the Rio Grande. After crossing this valley, we pass the Peloncillo, or Stein's Peak range, through a low gap about 6 miles south of Stein's Peak and the old Boundary Commission road. The line then crosses the San Simon valley in a direct course for Railroad pass, in the Chiricahiu mountains, thence southwest across the valley of Payas de los Pimos, and across the Caliuro mountains

by way of Nugent's Pass, which is north of and about 10 miles from Dragoon Pass; thence to the valley of the San Pedro, near the settlement of Tres Alamos; thence south and up the San Pedro about 5 miles; thence west to the Cunega Pass, between the Whetstone mountains on the south and the Santa Catalina mountains on the north, and 20 miles north of Fort Buchanan summit, which is the highest point between the San Pedro and the Gila; thence northwest, down the valley of the Cunega and Rillito, to near the town of Tucson, following down the valley of Santa Cruz, keeping near the old stage route via the Point of Mountains to near Desert station. Then leaving the valley of Santa Cruz, and passing north of the Picacho mountain, we again strike the valley near Picacho station, and follow it about 20 miles; thence through a valley to the Gila near Sacaton, and about 60 miles below the mouth of the San Pedro, and down the valley of the Gila, 12 miles to the Pima villages, and following the Gila to its junction with the Colorado of the West at Fort Yuma, cutting off the great bend of the Gila by a direct natural route through St. Valentine's Pass. From there the line runs in a northwesterly direction, passing to the north of the sand (printed page 12) hills and across the Salt Lake district of the Colorado desert of California, over which our line for 45 miles is below sea level, the lowest point being 290 feet below tide water. In crossing this the line passes on the north margin of the Salt Lake of the Colorado desert; leaving the mud volcanoes about 5 miles to the south, and the Dos Palmos stage station about the same distance to the

north, we reach the Cabazon Valley 113 miles from Fort Yuma; thence on nearly the same course, 50 miles to the summit of San Gorgonio Pass, running 1¼ miles south of White Water stage station, and one mile south of Devontine's ranch, reaching the summit 2½ miles south of Edgar's ranch. This pass is 2621 feet above tide water, and its small elevation must be considered remarkable, as it lies between the San Bernardino and San Jacinto mountains, the highest peaks of the range. Leaving San Gorgonio Pass, our course is southwest, passing down one of the tributaries of the San Jacinto, which is known as the Potrero (or Pocket) of the San Jacinto, to the San Jacinto Plains and Temecula Plains—these plains lie between the main range and the Santa Ana range—and down the Temecula Plains to the head of Temecula canyon, and down the canyon, where the Temecula breaks through the Santa Ana range 10 miles to the open valley, striking the coast near the Santa Marguerita ranches, about 40 miles north of San Diego; thence south and down the coast on the western slope of the Solidad mountains, crossing the Solidad, San Louis Rey, San Dieguito and the ravine of La Jolla, skirting False Bay; thence to the shore of San Diego bay, and along the shore of the bay to the depot grounds of the Texas and Pacific Railway below the Pacific Steamship Company's wharf.

Distance from the Pima's Villages on the Gila river, 444.4 miles.

Fort Worth to San Diego.....1,457.64 miles.
Shreveport to San Diego.....1,676.64 miles.
Texarkana to San Diego .....1,693.63 miles.

I also offer in evidence the table of elevations, commencing with "Shreveport," on page 33, and ending with "San Diego," on page 34, as follows:

(Printed page 33.)

General Elevation (above the Sea) from Red river to San Diego, on the Line of the Texas and Pacific Railway.

	Feet above tide water.
Shreveport	204
Marshall	377
Jefferson (Jefferson branch)	226
Texarkana (Transcontinental branch)	287
Longview	342
Silver Lake	350
Divide between Sabine and Trinity rivers	529
(Printed page 34.) Dallas	481
Sherman (Transcontinental branch)	734
Fort Worth	629
Weatherford	1,000
Divide between Trinity and Brazos rivers	1,195
Valley of the Brazos	825
Staked Plains	2,850
Highest point on same	3,377
Valley of the Pecos	2,700
Hurd's Pass (Guadaloupe Mts.)	4,193
Valley west of Guadaloupe	3,640
Heuca Pass	5,027
El Paso (or Fort Bliss)	3,732
Table-land (Sierra Madre)	4,420 to 4,520

Summit of Continent	4,893
Peloncello Pass	4,339
San Simon Valley	3,562
Railroad Pass	4,388
Nugent's Pass	4,711
San Pedro river	3,429
Cunega station	4,088
Tucson	1,898
Pima villages	1,193
Fort Yuma	145
Divide between Gila and Colorado desert	437
Salt Lake (dry) in Colorado desert—below tide water	290
Cabazon Valley	998
San Gorgonio Pass	2,621
Santa Marguerita Ranches	104
San Diego (on the Pacific)	16
Tres Alamos	3,729

I also offer in evidence a portion of said report commencing on page 47 with the heading "Conclusion," and ending on page 49 before the words "land department," as follows:

(Printed page 47.)

Conclusion.

The Texas & Pacific Railway opens up to settlement a vast undeveloped agricultural and mineral region, now only unavailable from the want of the means of cheap and quick communication and transportation. It secures to the Government a lasting and permanent peace with the

hostile Indian tribes. It will bring us in direct communication with Mexico, and open up an extensive trade which has heretofore sought other countries. It is a line of even temperature—no snow, no extremes. It is the shortest railroad communication from sea to sea—1,460 miles from harbor to harbor, against 3,300 miles by any other line.

The Union Pacific is a Central Northern line, gives a great (printed page 48) advantage in trade, and access to northern cities, and is the great feeder to northern railroads.

The Texas & Pacific would become the feeder of the general system of railroads running through the south, and would bring into competition the two great systems of the continent, and bring all the means and advantages of the southern system to the development of the trade through the southern States and territories, and allow their roads to compete on equal terms for the trade of the Pacific coast and all other countries whose trade seeks its harbors.

It is the shortest way to Europe from Australia, India, China and Japan—the distance from San Diego to Nagasaki, Japan, 5,709 miles; San Diego to Shanghai, China, 6,264 miles; San Diego to Hong Kong, China, 6,850 miles; San Diego to Sydney, Australia, 15,900 miles.

To accommodate this trade, we have at San Diego a completely landlocked harbor, as safe as any in the world. Vessels drawing 26 feet of water can come alongside our wharves at all stages of water. The channel of the harbor is 12½ miles long, and about half a mile

wide, the water varying in depth from 20 to 51 feet, giving ample room for a fleet of 1,000 first-class ships to ride at anchor. It is the shortest and most direct line across the continent, is of low grades and light curvatures, and passes all the great mountain ranges to the south, or overcomes them at light grades and low altitudes, below the snow limit. It develops a vast extent of country without any natural means of communication which can be reached in no other way. It settles the Indian question, as along its line is the only territory infested by hostile bands of Indians, and dispenses with a long line of frontier defenses, and will save to the Government at least five million dollars annually, as experience has proved that a railway line through Indian territory is a fortress as well as a highway.

* * * * * * * * * *

Upon my chiefs of divisions most of the work has devolved. They have carried out their instructions with alacrity, ability, and good judgment, and often under difficulties that would have deterred most men. They have all found a line over their respective divisions far superior to any that were supposed to exist. (Printed page 49.) Especially is this the case with the line over the Sierra Nevada mountains and the Guadaloupe range, and these were only determined after months of continued examination and reconnoissances.

Since July, 1872, the surveys have been extended from the Red river, in Texas, to the Pacific Ocean, in the general direction of the 32d parallel of latitude, exploring a country 200 miles in width, developing its resources,

bringing to light its hidden treasures, and fully demonstrating its capability for building and sustaining a railroad to the Pacific Ocean.

The country has been systematically developed. Explorations have been pushed to success, and one after another of the engineering obstacles supposed to exist to the building of the Southern Pacific Railway have been met and overcome; the route of the road has been definitely fixed, and unquestionably it is the best to be had across the continent in the zone which has been explored. I desire to extend my thanks for the courtesies and aid extended to me at all times by the military under Generals Augur and Pope, and the officers and troops have cheerfully extended us all the aid and protection we desired.

I desire to call the attention of the company to the able and effectual manner in which Mr. R. S. Hayes, engineer in charge of construction, and Messrs. Evans, Wolcott, Hurd, O'Neill and Hodges, engineers in charge of surveys, and J. M. Eddy, assistant superintendent, and the heads of departments and subordinates have performed their duties and the fidelity with which they have executed their trusts."

I also offer in evidence, on page 51, the signature, as follows: "Respectfully submitted,

G. M. DODGE,
Chief Engineer."

I also offer in evidence from the printed report, the report beginning on page 109 with the words "San Diego, Cal., Feb. 3, 1873," and ending with the words "James A. Evans, Engr. Cal. Division," on page 146, as follows:

(Printed page 109.)

San Diego, Cal., Feb. 3, 1873.

Gen. G. M. Dodge, Chief Engineer.

Dear Sir: I herewith submit a report of engineering operations conducted under my charge on the California Division of the Texas & Pacific Railway. The examinations covered by this report extend over a space of six months, from August, 1872, to January, 1873, both inclusive. A single party was placed in the field in July, but the work was only fairly commenced in August, 1872. Since then the country between the bay of San Diego and the Colorado river has been fully examined; 700 miles of line have been actually run in such a way as to give an estimate of cost, much of which has been over a country where the progress was not more than half a mile per day. In addition to this, reconnoissances have been made, distances measured, and altitudes taken over 300 miles of additional country.

For the better understanding of the work, the several lines will be designated as follows:

Line A.—Otay Valley Line.

Line B.—San Gorgonio Pass Line No. 1, via the San Diego river, Murphy's canyon, Buena Vista, S. Louis Rey, Temecula, Temescal, Riverside and San Bernardino.

Line C.—San Gorgonio Pass Line No. 2, via the coast, Temecula, Temescal, Riverside and San Bernardino.

(Printed page 110.)

Line D.—San Gorgonio Pass Line No. 3, via the coast, Temecula, Santa Gertrude canyon, and the Potrero of San Jacinto.

Line E.—San Gorgonio Pass Line No. 4, via the coast, Temecula, the Laguna, San Jacinto Valley, Box Spring canyon, Riverside and San Bernardino.

Line F.—San Gorgonio Pass Line No. 5, via the coast, Temecula, San Jacinto Plains, Box Spring canyon, Riverside and San Bernardino.

Line A.—Otay Valley Line.

This line has its initial point within the corporate limits of the city of San Diego, and on land to be used as passenger depot grounds. Passing through a portion of the city, occupied to some extent, although not interfered with, by buildings, it cuts off an arm of the bay, thereby bringing the main line within easy access of the ship channel to lands now owned in fee by the company. So much of the line, whatever course may be taken in getting away from the bay, would be common. Leaving the lands of the Texas & Pacific Railway Company, the line crosses Chollas creek near its mouth, passes through the National rancho, along one of the streets of National City as surveyed, and with easy grades, good alignment, and light work reaches the high mesa land lying between the bay and the mountains.

The section of line above described has been put in with care, and, if adopted, no further location of it will be required. It was thought best to do this, so as to be able to form an idea of how far one line would interfere with property comparatively valuable, as well as to enable the city authorities of San Diego to commence negotiations for right of way.

The line in its progress from the mesa or table-land curves to the left, entering the valley of Otay creek, the drainage of which it follows to its summit.

For a distance of 27 miles from the initial point the line is as above described on the shore of the bay, on the table-land, and in the Otay Valley. The material is generally drift or alluvium; easy to move, with the single exception that at what is known as the bend of the Otay a tunnel of 1600 feet will be necessary, as well as an expensive crossing of the stream itself.

(Printed page 111.)

The material in the tunnel is a metamorphic rock, difficult to drill, and so shattered that a tunnel through the point would very likely require lining. The heavy work here is caused by a sharp projecting spur impossible to avoid by curvature.

At this point (27 miles from zero) the character of the line changes, from the necessity we are under of availing ourselves of the side slopes of the valley to overcome elevation beyond.

This may be considered the foot of the steep gradients on the western slope of the range. From here the line is on the broken slopes of the neighboring hills. On the 31st mile a tunnel 900 feet in length will be necessary, the material in which, being granite, can be removed at less cost than the tunnel before described. Unless it should prove so fragmentary as to require lining, it will not be difficult. Nothing but an examination of the profiles can give an adequate idea of the character of the work from where we leave the valley of the creek to the

summit of this drainage. The summit, when reached, is broad and flat, making it impracticable to lower it by cutting, and so reduce the gradient.

Otay summit is the watershed between the Otay drainage and that of the Tia Juana; the Ysidoro or Cottonwood branch of which, a short distance beyond Otay summit, crosses our direction nearly at right angles, making it impossible within the limit of economy to maintain our general course. The line, therefore, hugs the broken hillside bordering the San Ysidoro canyon on the west, a distance of 6 miles, maintaining a level grade, the fall of the canyon for the distance being over 100 feet per mile; crossing the gorge 130 feet above its bed to an equally broken slope on the eastern side of the canyon, upon which slope the line continues to the mouth of Bear canyon, a tributary gorge, the general direction of which is favorable.

The distance from the crossing of the San Ysidoro to the head of Bear canyon is twelve and two-tenths miles; difference in elevation 1,371 feet. The summit of Bear canyon is not suitable for deep cutting, being broad and flat. We are, therefore, from necessity, obliged to use a grade of 116 feet per mile for the entire distance.

The slopes east of the San Ysidoro and Bear canyons are very broken. The material is granite, either solid or in loose boulders (printed page 112)of great size. The profile gives a succession of deep cuttings and high embankments. The character of the work here would make the arriving at an estimate of quantities difficult. The specifications would always be doubtful; and measurement in some sort impracticable.

The summit of Bear canyon is secondary in character, dividing the drainage of the San Ysidoro from that of Melquaty creek, both tributaries of the Tia Juana; the latter drainage being carried into the San Ysidoro some 8 miles above the mouth by means of Tecate creek. From the summit of Bear canyon easterly, a level grade is used for a distance of 100 miles, while the line is kept on the slope of the hill bordering the Melquaty valley on the north.

Some actual distance might be saved on this section at a loss of elevation and depression, and by the use of heavy gradients. It is a question, however, if operating distance could be saved. Nothing but a location could determine this. If, however, the line has any claims to the adopted one, the attempt should be made.

From the end of this level grade gradients approximating the maximum of 116 feet are used to the head of this drainage at Walker's summit, the dividing ridge between waters flowing eastward to the desert, and those flowing westward to the bay of San Diego. This summit is in no sense a pass, but the crest of the watershed. Its altitude is 3,870 feet above mean low tide; distant from the initial point 81.62 miles.

From this summit to the desert via Carrisso canyon, the descent is continuous, the work from the summit eastward differing but little in character from that west of it, until the head of Carrisso canyon is reached. This canyon is a deep, narrow gorge, the direction of which is nearly north, and parallel with the canyon of the San Ysidoro, heretofore referred to, and from which it does

not differ materially in character, save that the rock on the slopes of the Carrisso is more broken up and fragmentary, the slope steeper, and the projecting spurs sharper and more numerous. The best line we can obtain down the canyon will require, in a distance of 10 miles, eleven tunnels, aggregating in distance 6,755 lineal feet.

(Printed page 113.)

The direction of the gorge of the Carrisso being, as stated, nearly north, the first available opportunity is taken of passing through the hills to the east of it by means of a tunnel 1600 feet in length, which carries the line to the desert slope, which the line follows with variable gradients, some of which are 105 feet per mile. A distance of 31 miles from the mouth of the tunnel last referred to brings the line to the level of the desert plain.

For one-third of the distance last-named, or say 10 miles, the line passes over a smooth slope covered with drift pebbles from the hills, having a substratum of clay, desert, and sterile. The course of the line eastward is over the depression of New river, in which basin or depression the grade line falls to 37 feet below our datum line of mean low rates in the bay of San Diego.

There can be no question but that much of the country passed over by this line, "especially where the soil is of a clayey character," could, by the application of water, be made highly productive.

Some of the country west of the New river basin is covered with a light layer of shifting sand, likely to give some, but no serious trouble in operating the road. The

mode of construction here would be that of having the roadbed in embankments some two feet above the natural surface, which plan would, from necessity, be pursued here, if no shifting sand made it desirable.

From the crossing of New river (which is nothing more than back water from the Colorado in time of freshets) to the sandhills, the character of the country does not differ materially from it, except that more of the ground is covered with a scattering growth of mesquite timber, well adapted for fuel; indeed, on no part of this line can this necessary material for operating a road be had so readily or with so little cost.

The total distance from San Diego to the sand hills of the desert is 178 miles. These sand hills, which are impossible to avoid by a direct line from the Carrisso canyon, seem to be an accumulation of drifting sand carried by the prevailing winds from the upper gravelly plain to the desert. They extend from northwest to southeast. Our line via San Gorgonio Pass (printed page 114) goes to the north and barely touches them. They extend across the Mexican boundary line, increasing in altitude and width of base as we follow them from north to south.

There are two ways of avoiding them altogether: First, by changing the direction of the line from where the level plain of the desert is reached, and connecting with the line from the San Gorgonio Pass; or second, by dropping below the boundary line between the United States and Mexico. The former would lengthen the distance from San Diego to Fort Yuma 18 miles; the latter

would not increase the distance materially, but would be in foreign territory for a distance of 8 miles.

Total distance from depot grounds at San Diego to crossing of Colorado river at Fort Yuma, 203.11 miles.

Table of Grades.

	Ascending Miles.	Descending Miles.
Between 0 feet per mile and 20 feet per mile	35.29	12.39
" 20 feet per mile and 40 feet per mile	14.21	8.28
" 40 feet per mile and 60 feet per mile	9.67	2.02
" 60 feet per mile and 80 feet per mile	6.36	13.32
" 80 feet per mile and 105 feet per mile	16.86	28.64

	Ascending Miles.	Descending Miles.
Maximum of 116 feet per mile	11.68	
Level grade		44.39
Distance ascending	94.07 miles.	
" descending	64.65 "	
" level grade	44.39 "	
Total distance	203.11 miles.	

(Printed page 115.)

Estimate of Cost—Section No. 1.

From Depot Grounds to Station 908+70, Foot of Grade in the Otay Valley.

Distance 26.8 miles.

541,464	C. yards earth excavation at	$	32	$178,683 12
53,000	" " loose rock " "		1 00	53,000 00
53,000	" " solid " " "		2 25	119,250 00
17,500	" " tunneling at		14 00	245,000 00
525	" " second-class masonry at		10 00	5,250 00
995,747	feet, B. M., timber in trestles, at		50 00	49,787 35
28,070	pounds of wrought-iron bolts at		10	2,807 00
19,746	pounds of cast-iron washers at		8	1,579 68
26.8	miles superstructure—including iron, ties, laying, &c., at		13,000 00	348,400 00
40,284	lin. feet piling		50	20,142 00

26.8 miles at $38,205.00 per mile, $1,023,899.15.

Section No. 2.

From Station 908+70, Foot of Heavy Grade, to Station 4,300, in the Carriso Canyon.

Distance 81.57 Miles.

2,970,736	C. yards earth excavation at	$	30	$ 891,220 80
943,320	C. yards loose rock excavation at		1 00	943,320 00
1,907,903	C. yards solid rock excavation at		2 00	3,815,806 00
220,000	C. yards solid rock excavation at		1 75	385,000 00
116,741	C. yards tunneling at		12 00	1,400,892 00
6,156	C. yards first-class masonry, at		20 00	123,120 00
21,830	C. yards second-class masonry, at		12 00	261,960 00
600	lin. feet of truss bridging at		38 00	22,800 00
7,055,967	feet, B. M., timber in trestles, at		50 00	352,798 35
111,892	pounds wrought-iron bolts at		10	11,189 20
154,012	pounds cast-iron washers at		8	12,320 96
81.51	miles superstructure—iron, ties, track-laying, &c., at		13,000 00	1,060,410 00

81.57 miles at $113,777.00 per mile, $9,280,837.81.

(Printed page 116.)

Section No. 3.

From Station 4,300 in Carriso Canyon to Station 5,300 on the Desert.

Distance, 18.94 Miles.

1,339,850	C. yards earth excavation at.....	$	28	$375,158 00
96,073	C. yards loose rock excavation at... ..		1 00	96,073 00
692	C. yards first-class masonry at.....		20 00	13,840 00
5,092	C. yards second-class masonry at...		12 00	61,104 00
962,228	feet, B. M., timber in trestles, at.....		50 00	48,111 40
18,106	pounds wrought-iron bolts at.....		10 00	1,810 60
22,722	pounds cast-iron washers at.....		8 00	1,817 76
18.94	miles superstructure—iron, ties, track-laying, &c., at.....		13,000 00	246,220 00

18.94 miles at $44,568.00 per mile, $844,134.76.

Section No. 4.

From Station 5,300 to Colorado River at Fort Yuma.

Distance, 75.8 Miles.

1,094,215	C. yards earth excavation at.....	$	25	$273,553 75
62	C. yards second-class masonry at.....		12 00	744 00
415,676	feet, B. M., timber in trestles, at		60 00	24,940 56
8,376	lin. feet piling at.....		80	6,700 80
10,888	pounds wrought-iron bolts at		10	1,088 80
5,098	pounds cast-iron washers at..... . ..		8	407 84
75.8	miles superstructure—iron, ties, and track-laying, at.....		13,000 00	985,400 00

75.8 miles at $17,056.00 per mile, $1,292,835.75.

Summary of Cost.

Section No. 1	26.8	miles,	$1,023,899 15
" " 2	81.57	"	9,280,837 31
" " 3	18.94	"	644,134 76
" " 4	75.8	"	1,292,835 75
203.11 miles at $61,256.00			$12,441,706 97

Total amount of elevation	4,580.8 feet.
" " " depression	4,452.1 "
" " " curvature	17,864 degrees.

(Printed page 117.)

The foregoing estimate is based upon a width of roadbed of 16 feet in cuttings and 12 feet where the work is on embankment. In the side hill work, more especially in the San Ysidoro and Carrisso canyons, where the deep gulches occur, the estimate is based upon the supposition that we take what excavation there may be in the adjacent cuttings to form a base for trestle-work of timber. In a few cases an amount of borrowed material is estimated, so as to bring the length of posts within 100 feet. In one case, crossing the Cottonwood, or San Ysidoro, four spans of truss bridging have been estimated, making 600 lineal feet. The mode of estimating this line, and the same is true of all the lines, has been this: The line has been estimated in embankment. Wherever the material in the excavation is shown to be beyond a reasonable hall (1,000 feet), that quantity has been added. All cuttings have been classified. On the rocky sections of the work, the foot of the heavy gradient, twenty-seven miles from the initial point, the material in excavation has been assumed

to be twenty-five per cent earth, twenty-five per cent loose rock, and fifty per cent solid rock. This classification is believed to be tolerably correct, so far as the cuttings are concerned.

The material which it is necessary to obtain for road-bed outside of the cuts proper, technically termed "borrowed," is assumed to be earth; it forms a considerable part of what is termed "earth excavation" in the estimates.

The character of the mountain work and its material on this line is such that it may be difficult to obtain the quantity of earth for the purpose. A large quantity of loose rock may have to be obtained, which would increase the aggregate of the estimate and the cost of the work.

The amount of curvature on this line, 17,864 degrees, is excessive, indicating of itself a very broken country. It will be readily seen, if the total curvature be divided or distributed over that part of the line where it occurs, viz., between the foot of the grade and where the line leaves Carrisso canyon, a distance of 83 miles, it will be found to give a curve of 4 degrees per station; radius, 1432 feet for that entire distance. Curves of eight degrees and ten degrees will be found necessary on this line in many places, as in Carrisso canyon and also in (printed page 118) the San Ysidoro. A lateral shift of a few feet would place the line in heavy work, in some cases making a difference of eighty or one hundred feet in the altitude. Nothing short of an actual inspection of the line on the ground can convey an adequate idea of the character of the work. It is safe to assume that no bids by the yard for doing

much of this work would be had. There would always be a doubt as to classification and a difficulty in holding material once disturbed in its place.

In consequence of the rocky character of the mountain section of this line, the grade line has been thrown out of cutting as much as a due regard for economy will warrant; the embankments are therefore heavier to some extent. Much of the heavy embankment is replaced by timber, as is evidenced by the large amount of that material provided for in the estimate.

San Gorgonio Pass Line.

As on the western slope we have several approaches to this pass, it will be necessary to institute a comparison between them, so as to arrive at the best line as to cost of construction and economy of operating.

What is designated in the index as San Gorgonio Pass Line No. 1 starts from the so-called depot grounds, at the foot of Spring street, San Diego, having a common starting point with the Otay Valley Line. At old San Diego distant from the initial point 2.65 miles, we have the starting point of San Gorgonio Pass Line No. 2; Line No. 1 following the San Diego river for a short distance, thence up Murphy's canyon, keeping in the interior crossing the drainage of the Soledad, Penasquitas, San Diegito and San Luis Rey, dropping into the valley of Temecula creek.

The latter, or Line No. 2, from its diverging point at old San Diego, hugs the coast as far as the Santa Marguerita Rancho, where the Temecula creek finds its way to the

sea, up the valley of which it runs, connecting with Line No. 1.

In the comparison we may consider the distance of 2.65 miles as common to both lines.

Distance, Line No. 1	64.5 miles
Distance, Line No. 2	59.3 miles
Elevation, Line No. 1	2,020.6 feet
Elevation, Line No. 2	903.6 feet
Depression, Line No. 1	1,624.7 feet
Depression, Line No. 2	521.9 feet

It will be seen from the above that distance is in favor of the coast line—elevation and depression largely in favor of it; and, when we take into account that much of the additional elevation and depression on the interior line is surmounted by means of heavy grades of 105 feet to the mile, whereas on the coast line no gradient of more than 63 feet per mile is necessary, the comparison is greatly in favor of the coast line. To make the comparison more complete, the following estimate of both sections is submitted:

Section of Line No. 1.—Interior Line.

Distance, 64.5 Miles.

1,369,216	C. yards earth excavation at	$	30	$410,764 80
315,681	C. yards loose rock excavation at		1 00	315,681 00
411,541	C. yards solid rock excavation at		2 00	823,082 00
14,040	C. yards tunneling at		12 00	168,480 00
5,168	lin. feet piling at		60	3,100 80
3,709	C. yards second-class masonry at		12 00	44,508 00
1,418,967	feet, B. M., timber in trestles, at		50 00	70,948 35
31,615	lbs. wrought-iron bolts at		10	3,161 50
25,674	lbs. cast-iron washers at		8	2,053 92
64.5	miles of superstructure—iron, ties and track-laying, at		13,000 00	838,500 00

64.5 miles at $41,554 per mile, $2,680,280.37.

Estimate of Part of Line No. 2.—Coast Line.

Distance, 59.3 Miles.

1,782,891	C. yards earth excavation at	$	30	$534,867 30
60,721	C. yards solid rock excavation at		2 00	121,442 00
5,926	C. yards tunneling excavation at		10 00	59,260 00
2,900	C. yards first-class masonry at		20 00	58,000 00
2,000	C. yards second-class masonry at		12 00	24,000 00
77,714	lin. feet piling at		50	38,857 00
1,840,270	feet, B. M., timber in trestles, at		50 00	92,013 50
63,114	lbs. of wrought-iron bolts at		10	6,311 40
31,248	lbs. of cast-iron washers at		8	2,499 84
2,250	lin. feet of truss bridging at		38 00	85,500 00
59.3	miles of superstructure—iron ties, &c., at		1,300 00	770,900 00

59.3 miles at $30,247 per mile, $1,793,651.04.

(Printed page 120.)

It is possible that some of the material classified above on "sec. of line No. 1" may prove to be soft, loose rock. With our present arrangements of grades, if so, it will not be difficult to lift our grade line out of it. The character of the work along the coast is so favorable that the price attached (30 cents per yard) is high, and will go far towards remedying any error in classification.

As there is a difference of five and two-tenths miles in distance, a large difference in cost of construction, as well as in cost of operating, all in favor of the coast line, we may discard the interior line altogether. From the convergence of the two sections last referred to and compared, the line continues up the narrow canyon of Temecula creek for a distance of 7.26 miles, which distance is necessarily common to all lines approaching the San Gorgonio Pass from the bay of San Diego. A further description of the canyon will be given hereafter.

At the head of Temecula canyon we find the second divergent point of lines Nos. 1 and 2, the first going by way of the Laguna, Temecula creek, Riverside and San Bernardino to the San Gorgonio Pass, and the latter by a direct line via the Potrero of San Jacinto.

Line B.—"Gorgonio Pass Line No. 1," being disposed of by the comparison already made, we will now consider Line C, "Gorgonio Pass Line No. 2," as from the head of Temecula canyon, B and C are common.

Lines E and F are but modifications of Line C, the first (E) diverging from it at the Laguna and connecting again near Riverside, in the Santa Anna valley; the latter (F)

diverging at the head of Temecula canyon, occupying for a short distance common ground with the direct line (D), and connecting with Line E on the San Jacinto plains, from whence E and F are identical to point of connection with line C, near Riverside.

It will be necessary, therefore, to compare, first, Lines E and F; secondly, to compare the best of the two with Line C.

(Printed page 121.)

Distances are as follows:

Head of Temecula conyon to Riverside, Line E, 47.18 miles.

Head of Temecula canyon to Riverside, Line F, 43.61 miles.

	Line E.	Line F.
Total elevation	678.5 feet	679.3 feet
Total depression	705 feet	753.7 feet

Estimate of Line E.

From Head of Temecula Canyon to Riverside.

Distance, 47.18 Miles.

357,991	C. yards earth excavation at.....	$ 30	$107,397 30
73,871	" " loose rock " ".....	1 00	73,871 00
147,742	" " solid " " ".....	2 00	295,484 00
883	" " second-class masonry at.....	12 00	10,596 00
728	lin. feet piling at.....	60	436 80
552,618	feet, B. M., timber in trestles, at.....	50 00	27,630 90
12,759	pounds wrought-iron bolts at.....	10	1,275 90
6,756	pounds cast-iron washers at.....	8	405 36
47.18	miles superstructure—iron, ties and track-laying, at	13,000 00	613,340 00

47.18 miles at $23,960.00 per mile, $1,130,437.26.

Estimate of Line F.

From Head of Temecula Canyon to Riverside.

Distance, 43.61 Miles.

420,531	C. yards earth excavation at	$ 30	$126,159 30
75,475	" " loose rock " "	1 00	75,425 00
150,856	" " solid " " "	2 00	301,712 00
1,699	" " second-class masonry at	12 00	20,388 00
508,702	feet, B. M., timber in trestles, at	50 00	25,435 10
12,022	pounds wrought-iron bolts at	10	1,202 20
6,528	" cast-iron washers at	8	522 24
43.61	miles superstructure—iron, ties and track-laying, at	13,000 00	566,930 00

43.61 miles at $25,633.00 per mile, $1,117,773.64.

(Printed page 122.)

Estimate of Line C.

From Head of Temecula Canyon to near Riverside.

Distance, 53.66 Miles.

301,808	C. yards earth excavation at	$ 30	$90,542 40
48,362	" " loose rock " "	1 00	48,362 00
400	" " second-class masonry at	12 00	4,800 00
3,128	lin. feet piling at	60	1,876 80
340,284	feet, B. M., timber in trestles, at	50 00	17,014 20
8,831	pounds wrought-iron bolts at	10	883 10
5,292	" cast-iron washers at	8	423 36
53.66	miles superstructure—iron, ties and track-laying, at	13,000 00	687,580 00

53.66 miles at $15,870.00 per mile, $851,481.86.

	Line F.	Line C.
Total elevation	679.3 feet.	732.35 feet.
" depression	753.7 "	715.05 "

The comparison here again resolves itself into one of distance and cost, the elevation and depression on one line approaching that of the other very nearly. If the grades were equated on both lines, the distance of 43.61 miles length of line F would be made to approach that of Line C, caused by the heavier gradients of the former.

The advantages of this section of Line C over the shorter line are, as seen, a difference in cost of $266,292.00, and the better opportunity it offers for northern connections, as where the line deflects to the right out of the Temescal Valley the distance to Los Angeles cannot be more than 37 miles. Either line would open up the country bordering the Santa Ana river, and that of San Bernardino.

We will now compare Lines C and D from their divergence at the head of Temecula canyon to where they converge in the pass of San Gorgonio.

Distance from Temecula canyon to Pass Line C, 78.39 miles.

Distance from Temecula canyon to Pass Line D, 40 miles.

	Line C.	Line D.
Total elevations	2,414.35 feet	1,774.4 feet
Total depressions . . .	755.05 feet	77.9 feet

(Printed page 123.)

Estimate of Line C.

From Head of Temecula Canyon to San Gorgonio Pass.

Distance, 78.39 Miles.

531,808	C. yards earth excavation at	$	30	$ 159,542 40
95,665	" " loose rock " "		1 00	95,665 00
345	" " second-class masonry at		12 00	4,140 00
3,128	lin. feet piling at		60	1,876 80
47,258	feet, B. M., timber in trestles, at		50 00	27,362 90
13,912	pounds wrought-iron bolts at		10	1,391 20
8,812	" cast-iron washers at		8	684 96
78.39	miles superstructure—iron, ties and track-laying, at		13,000 00	1,019,070 00

78.39 miles at $16,708.00 per mile, $1,309,733.26.

NOTE.—The additional elevation and depression on this line is caused by the secondary summit between the Temecula and Temescal.

Estimate of Line D.

From Head of Temecula Canyon to San Gorgonio Pass.

Distance, 40 Miles.

839,381	C. yards earth excavation at	$	30	$251,814 80
95,968	" " loose rock " "		1 00	95,968 00
191,939	" " solid " " "		2 00	383,878 00
6,498	" " tunneling at		10 00	64,980 00
2,724	" " first-class masonry at		20 00	54,480 00
2,574	" " second-class " "		12 00	30,888 00
350	lin. feet truss bridging at		38 00	13,300 00
1,204,000	feet, B. M., timber in trestles, at		50 00	60,200 00
24,623	pounds wrought-iron bolts at		10	2,462 30
17,660	" cast-iron washers "		8	1,412 80
40	miles superstructure—iron, ties and track-laying, at		13,000 00	520,000 00

40 miles at $36,985.00 per mile, $1,479,383.90.

The aggregate cost of the sections last considered differ $169,650. To offset this, we have the shorter distance on Line D, with a much better arrangement of grades, as our ascent is continuous from the head of Temecula canyon to the pass; whereas, on Line C, we make the subsidiary summit between the Temecula waters and those of Santa Anna creek via the Temescal.

(Printed page 124.)

If grades were equated, the difference in operating distance would be further increased. Throwing aside whatever advantage Line C may have in the matter of future connections, we will be quite safe in assuming Line D to be the best in an engineering point of view.

It will be understood that all the lines via Gorgonio Pass have a common extension from the pass to the Colorado river.

I shall now give an estimate of the cost of Line D from the initial point to the crossing of the Colorado river. Total distance from initial point in San Diego to the crossing of Colorado river at Yuma, 270.34 miles.

Total amount of elevation .....4,138.7 feet
Total amount of depression.....3,995.9 feet

Table of Grades.

	Ascending.	Descending.
Between 0 feet and 20 feet per mile.....	63.26	43.65
" 20 " " 40 " " "	32.27	20.30
" 40 " " 60 " " "	10.20	13.85
" 60 " " 80 " " "	7.73	9.62
" 80 " " 105 " " "	13.79	14.65
Level.....	.....	41.02
Total.....		270.34
Maximum grade of 105 feet per mile.....	9.83	6.37

Total amount of curvature 6,354 degrees.

Estimate, Section No. 1.

From Depot Grounds via the Coast to Head of Temecula Canyon.

Distance, 67.08 Miles.

1,812,195	C. yards earth excavation at.....	$ 30	$543,658 50
165,689	" " solid rock " ".....	2 00	331,378 00
8,122	" " tunneling at.....	10 00	81,220 00
2,900	" " first-class masonry at.....	20 00	58,000 00
2,932	" " second-class " ".....	12 00	35,184 00
15,000	" " slope wall at.....	5 00	75,000 00
2,250	lin. feet truss bridging at.....	38 00	85,500 00
77,714	" " piling at.....	50	38,857 00
2,356,908	feet, B. M., timber in trestles, at.....	50 00	117,845 40
74,749	pounds wrought-iron bolts at.....	10	7,474 90
46,434	pounds cast-iron washers at.....	8	3,714 72
67.08	miles superstructure—iron, ties, and track-laying, at.....	13,000 00	872,040 00

67.08 miles at $33,540.00 per mile, $2,249,872.52.

(Printed page 125.)

Estimate. Section No. 2.

Head of Temecula Canyon to San Gorgonio Pass.

Distance, 39.98 Miles.

839,381	C. yards earth excavation at.....	30	$251,814 30
95,968	" " loose rock " ".....	1 00	95,968 00
191,939	" " solid " " ".....	1 75	336,893 25
6,498	" " tunneling at.....	10 00	64,980 00
2,724	" " first-class masonry at.....	20 00	54,480 00
2,574	" " second-class " ".....	12 00	30,888 00
350	lin. feet truss bridging at.....	38 00	13,300 00
1,204,000	feet, B. M., timber in trestles, at.....	50 00	72,240 00
24,623	pounds wrought-iron bolts at.....	10	2,462 30
17,660	" cast-iron washers at.....	8	1,412 80
39.98	miles superstructure—iron, ties, and track, at.....	13,000 00	519,740 00

39.98 miles at $36,098.00 per mile, $1,443,178.65.

Estimate, Section No. 3.

San Gorgonio Pass to Fort Yuma.

Distance, 163.28 Miles.

880,598	C. yards earth excavation at.....	$ 30	$264,179 40
51,000	" " loose rock " ".....	1 00	51,000 00
21,000	" " solid " " ".....	2 00	42,000 00
1,320	" " second-class masonry at.....	10 00	13,200 00
4,800	" " slope wall at.....	5 00	24,000 00
53,650	lin. feet piling at.....	70	37,555 00
20,810	pounds wrought-iron bolts at.....	12	2,497 20
9,845	pounds cast-iron washers at.....	8	984 50
668,078	feet, B. M., timber in trestles, at.....	70 00	46,765 46
163.28	miles superstructure—iron, ties and track, at.....	13,000 00	2,122,640 00

163.28 miles at $15,953.00 per mile, $2,604,821.56.

Summary.

Section No. 1	67.08 miles.	$2,249,872 52
" " 2	39.98 "	1,443,178 65
" " 3	163.28 "	2,604,821 56
$23,296.00 per mile	270.34 "	$6,297,872 73

We have now a full estimate of costs, distances, table of grades, etc., on Line A, "Otay Valley Line," and on Line D, which has proved to be the best approach to the San Gorgonio Pass from the bay of San Diego, and can now institute a comparison between them:

(Printed page 126.)

Comparison.

	Line A.	Line D.
Distance	203.11 miles.	270.34 miles.
Elevation	4,580.8 feet.	4,138.7 feet.
Depression	4,452.1 feet.	3,995.9 feet.
Curvature	17.864 degrees.	6.354 degrees.
Cost per mile	$61,256 00	$23,296 00
Total cost	$12,441,706 97	$6,297,872 73

Table of Grades—Line A.

	Ascending Miles.	Descending Miles.
Between 0 feet and 20 feet per mile.....	35.29	12.39
" 20 " " 40 " " "	14.21	8.28
" 40 " " 60 " " "	9.67	2.02
" 60 " " 80 " " "	6.36	13.32
" 80 " " 105 " " "	16.86	28.64
116 " " "	11.68	
Level.....	.....	44.39
Total..... 203.11 miles.		

Table of Grades—Line D.

	Ascending Miles.	Descending Miles.
Between 0 feet and 20 feet per mile.....	63.26	43.65
" 20 " " 40 " " "	32.27	20.30
" 40 " " 60 " " "	10.20	13.85
" 60 " " 80 " " "	7.73	9.62
" 80 " " 105 " " "	13.79	14.65
105 " " "	9.83	6.37
Level.....	.....	41.02
Total..... 270.34 miles.		

It will be seen from the preceding tables that only in the matter of distance has the Otay Valley Line (A) any superiority over the San Gorgonio Pass Line (D). This is more in seeming than in reality, being more than neutralized by the heavy gradients, additional elevations, and excessive curvatures of the Otay Valley line.

If we take an engine weighing 30 net tons, all of which is placed on the drivers, having cylinders 16 inches in diameter, with a stroke of 22 inches, driving-wheels 60 inches in diameter, working with an effective pressure of 105 pounds per square inch of piston, we have a tractive force.

$$\frac{16 \times 16 \times 22 \times 105 — 9856 \text{ lbs.}}{60}$$

The opposing force can be resolved into friction of engine, tender, and cars, resistance of gravity on inclinations and curvatures. We will assume friction of engine and tender to be 350 pounds; friction of cars, "a mean of several experiments," to be 6 pounds per ton. Resistance due to gravity—the formula:

$$\frac{W \times G}{5280}$$

(W—weight in pounds. G—grade in feet per mile.)

With the data assumed, we find that the engine will move on level grade 1,584 tons.

On a grade of 15 feet per mile.....820 tons
On a grade of 30 feet per mile.....546 tons
On a grade of 50 feet per mile.....371 tons
On a grade of 70 feet per mile.....293 tons
On a grade of 92½ feet per mile.....222 tons
On a grade of 116 feet per mile.....182 tons

We find, therefore, that a grade of

15 feet per mile for 1 mile equals—1.93 miles of level
30 feet per mile for 1 mile equals—2.9 miles of level
50 feet per mile for 1 mile equals—4.3 miles of level
70 feet per mile for 1 mile equals—5.4 miles of level
92½ feet per mile for 1 mile equals—7.1 miles of level
116 feet per mile for 1 mile equals—8.7 miles of level

If we assume the tonnage from east to west is equal to that from west to east, and apply the ratio, we find the 203.11 miles of the Otay Valley Line to be equal to 782.78 miles of straight level line. Taking the curvature, 17,864 degrees, and resolving it into a three-degree curve, equal to a grade of seven and one-half feet per mile, we have an additional length of level line of 146.64 miles, making in the aggregate, 929.42 miles.

(Printed page 128.)

Applying the same process to the San Gorgonio Pass Line (D), we find the 270.34 miles to equal 827.82 miles of level line. Taking, as in the last case, the curvature, and treating the 6,354 degrees in the same manner, we have an additional distance equivalent to a level line of 52 miles, a total of 879.82 miles, or forty-nine and six-tenths miles in favor of the San Gorgonio Pass Line (D).

It may be stated, further, that the method used of reducing the curvatures as above is largely in favor of the Otay Valley Line, as much of it would have to be used in six, eight, and ten degree curves, which, unfortunately, would occur on its heaviest grades.

No distance can be saved in location on the Otay Valley Line; but, rather, as already noticed, an additional dis-

tance of 18 miles would have to be made to avoid the sand hills of the desert.

A distance equal to two miles can be saved in location on Line D, as well as a saving of 100 feet in elevations. This was caused by the manner of making connection of Line D with Line C in the Gorgonio Pass, it is quite evident from an inspection of the map.

San Gorgonio Pass Line (D).

For purpose of description, this line may be conveniently divided into three sections:

First.—From the initial point in San Diego along the coast to the Rancho Santa Marguerita.

Second.—From the Rancho Santa Marguerita to San Gorgonio Pass.

Third.—From the San Gorgonio Pass to the crossing of the Colorado river at Fort Yuma.

Section 1.

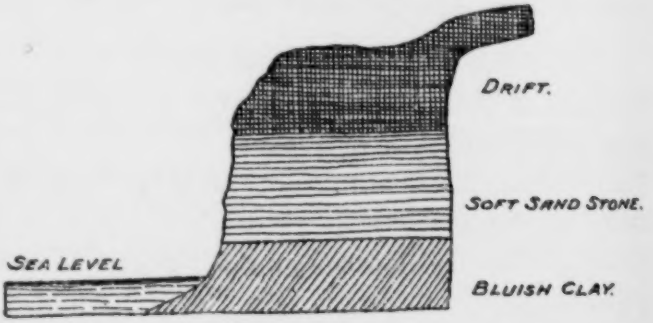
The initial point, as before stated, is identical with the zero of the Otay Valley Line. It passes along the shore of San Diego bay, with a general direction of N. N. W. to False bay, the channel of which it crosses where it is narrow and general depth of water slight, to the western slope of the Soledad mountains, continuing along that slope with easy grades and light work to the depression of La Jolla, a small ravine debouching directly to the ocean.

(Printed page 129.)

From this ravine of La Jolla to the mouth of Soledad creek, a distance of five and four-tenths miles, the break-

ers wash the base of a cliff. The Soledad mountain putting out a spur seaward for the whole distance, the heavy work on the coast line is mostly confined to this section.

The cliff presents nearly this profile:



Of the 1,782,891 cubic yards of material on this section, full 50 per cent is chargeable to this distance of less than five and a half miles. It is believed that a better arrangement of grade can be adopted on location than that I have used to make the estimate upon, and a saving made in quantities thereby.

From the vicinity of the Soledad to where the line deflects to the right, entering the Santa Marguerita Valley the country is favorable in many places; the cliff-like character of the country ceases, being replaced by a slope sufficiently flat so that the line can be placed upon its face without danger, or the moving of much material; and, again, where cliffs do occur, they are surmounted by flat table-lands easy of access, and conforming very nearly to a practicable grade.

Some elevation is lost from the necessity we are under of dropping into the valleys, viz., the La Jolla, Soledad, San Diegat, San Louis Rey, etc.

The maximum grade on this section will not exceed 60 feet per mile.

(Printed page 130.)

Section No. 2.

The distance from the Santa Marguerita valley to Los Angeles, via San Juan Capistrano and *Atahein* is estimated to be 74 miles, and the character of the country quite favorable for a railway.

From the Santa Marguerita valley, our line enters the canyon of Temecula creek. The initial point of this section (No. 2) may be considered the foot of steep grade on the San Gorgonio Pass Lines. The canyon is 10 miles in length, and is caused by the breaking through of the drainage of the Temecula basin through the Santa Ana mountains. The gorge is quite narrow in places; in seasons of freshet, the narrow channel being occupied solely by the water, as evidenced by marks on the rocks bordering the stream. A mode of construction interfering as little as possible with the waterway will have to be adopted. A reference to the estimates will show a liberal quantity of slope wall masonry provided for this part of the line.

The amount of work in the canyon is not excessive. The material will prove to be nearly all rock, and it has been so estimated. The grades are not as heavy as is usual in places of similar character, the maximum be-

ing 100 feet per mile for two miles of the distance through the canyon.

After leaving the gorge, the line crosses the open plain of Temecula, from whence it takes a course directly for the pass of San Gorgonio. This Temecula plain is an open valley between the main range and the Santa Ana mountains. The Temecula plain and the San Jacinto plain, both of which our line crosses, occupy the interval between the slope of the San Jacinto mountains and the secondary range or spur, called the Santa Ana mountains. The direction of the depression of the Temecula plain is northwest; estimated distance to Los Angeles, eighty miles; all of which is over a favorable country. Forty miles of it would be up a tributary of the Temecula and down the Temescal creek, the same ground as that occupied by our San Gorgonio Pass Line C.

From the head of Temecula canyon, the line is everything that can be desired for a distance of 24.81 miles, which takes (Printed page 131) in the slope of the Temecula basin and San Jacinto plain; from thence we follow up a tributary of San Jacinto creek to what is known as the Potrero. It is on this section that most of our heavy gradients of 105 feet per mile occur, as well as the greater part of our rock work and curvature.

This Potrero, or "pocket," opens out into the pass of San Gorgonio. A reference to the map will show that Line D tends to the left here, whereas it should bear to the right; this was done for the purpose of connection with the zero of a line starting from the pass. As a consequence, some two miles of distance is seemingly sacri-

ficed, and about 100 feet of elevation. The altitude of this, the best defined of all mountain passes, is 2,621 feet for line approaching it from San Bernardino, and 2,520 for a line via the Potrero. This seeming discrepancy is caused by the pass being triangular, having a drainage eastward to the desert, westward to the Santa Ana river, and southward to the San Jacinto. The trend of the summit is, therefore, diagonally across the broad plain of the pass, dropping off in elevation as the crest is followed southeasterly, which will readily account for the difference of 100 feet in favor of Line D via the Potrero of San Jacinto.

It is somewhat remarkable that this, the lowest of all the passes in the range, should be flanked by the highest mountains, having the high peak of San Bernardino to the north and that of San Jacinto, sometimes called San Gorgonio, to the south of it.

Section No. 3.

From the summit of San Gorgonio Pass, the line commences at once the descent towards the desert. Our profile shows light work, with maximum grades of 105 feet per mile, descending, until the mouth of Coahuila valley and the plain of the desert is reached. The grades down this slope are valuable and undulating, a constant descent being used. By increasing work and using a uniform grade a lower rate may be had. This would necessitate a closer adhering to the lateral slopes of the valley, and would increase quantities. As this is a part of the line not examined by myself personally, attention is

called to the accompanying report of Mr. J. U. Crawford, the assistant engineer, who made the survey:

(Printed page 132.)

San Diego, February 5th, 1873.

Jas. A. Evans, Esq., Eng'r Cal. Div. T. & P. Railway.

Dear Sir: I have the honor to report that on the 7th day of October, A. D. 1872, the corps of engineers under my charge began our exploration at the summit of the divide in San Gorgonio Pass. We found the summit to be a broad, triangular one, approached by three separate and distinct drainages—one from the west via the San Temotes canyon, a tributary of the Santa Ana river; another from the south via the Potrero canyon, a feeder of the San Jacinto; and a third one from the east via the San Gorgonio canyon, which unites with the White river drainage. These several systems, forking at their heads into innumerable avogos and washes, made the establishing of the most advantageous summit a matter of some difficulty, and one only to be finally determined upon by the development of the ground by cross levels. This has been successfully accomplished. We commenced by laying a line in an easterly direction, down the San Gorgonio canyon in the direction of Whitewater, adhering mainly to the bottom and northern slope of the valley, and obtaining most satisfactory results as to the cost of construction, alignments and gradients.

I found the soil generally to be mixed with boulders and covered with a close undergrowth of cactus and catclaw brush, among which cattle can find some little pas-

ture. The side hill, for the greater part, is an even slope, broken occasionally by shallow cross drainage. Some 2¼ miles to the north of where our line crosses the summit lies a ranch owned by Dr. Edgar. This is a well watered and exceedingly fertile estate, prolific in fruit and vines; a fine quality of wine is made at this place and bears the name of the summit. At this point, and adjacent to our line, are some never failing springs, which could easily be made available. Some 5¼ miles east of the summit our line passes 2½ miles from Gelman's ranch and Stage station, at which point a fine running spring would furnish an abundant supply of water, which Gelman freely tenders to the company in the event of their locating near them. Vandeverter's ranch is situated twelve miles from the summit and a mile north of (Printed page 133) the line. Here, also, water can be readily brought to the line. Further on, nineteen miles from the summit, we pass Whitewater Stage station, leaving it 1¼ miles to the north. Here we also find water in abundance. In this case, as is also the same with the others, the spring has a good head, and would be self-feeding to a height of fifty feet above the track.

Throughout the San Gorgonio Pass we found any amount of coarse granite rock, suitable for building masonry; while the sides and top of the San Jacinto mountains, and the ravines which cut deep into the sides of the San Bernardino mountains, are covered with a thick growth of pine, cedar, and oak, which is visible from the line, though apparently rather inaccessible. Upon our arrival at Whitewater station, I discontinued the sur-

vey of the line for the time being, and for a time operated on the western slope in the direction of Temecula, until the 27th day of November, 1872, when the line was again resumed, and pushed on past White river, where I found, for this season of the year, an unlimited supply of water fed from the mountains; when our party passed about midday it was running briskly. Our teams went on about three miles, skirting the stream, and pitched camp upon its border. They then began to fill the water barrels of the outfit, when suddenly the stream commenced to die away and sink from their view; so much so that, notwithstanding they closed it up, the party fared poorly for water that night; however, in the morning it was running briskly again. This, however, only occurs when it leaves the side hill and debouches upon the broad sandy expanse of the Coahuila Valley.

From this point as far as the Cabazon valley we passed through an arid, sandy, desert region, with no vegetation, save an occasional greenwood bush. Avoiding the sand hills, which laid for the most part in a ridge to the south of us, we laid a very direct line, without encountering any obstacles to cheap and rapid construction, to the Cabazon valley, which we entered some fifty miles southeast from the summit. Here we found the soil to have changed to a rich sandy loam, susceptible of successful cultivation by the aid of irrigation. There appears to be water in abundance, as wherever the Indians have dug for it their efforts have been (Printed page 134) rewarded, they always finding it within ten or fifteen feet of the surface.

The whole surface of this valley is covered with a thick growth of mesquite and arrow weed, which in a great measure protects it from the baneful influence of the sand storms which are prevalent here.

The Conia tribe of Indians live in this valley. They numbered some 1,700 souls when the last census was taken, but have since become reduced in numbers. They are a stalwart, hearty set of men, and subsist principally upon the mesquite bean, and the small game they are able to kill with their arrows, in the use of which they are exceedingly expert.

After leaving this valley, the line passes below tide level, and crosses the northern extremity of the Great Salt Lake of the Colorado desert. At the place of our crossing we did not strike water, but skirted it, as the mud was deep and tenacious; after which we crossed a large alkaline deposit, upon large blocks of almost pure salt, from 4 to 6 feet square and 8 to 10 inches in thickness, tassellated like a pavement, and almost correspondingly solid, which passed, we began to ascend, and traversing the southern projection of what had apparently been in ages remote a submerged island of disintegrated sands, stones, shells, a large deposit of gypsum and laminated mica. The slope was cut up in places by subsequent washes and drainage, and was completely bare of vegetation; to our north, and crossing this island, towered abruptly a formidable-looking mass—at a distance it resembled the ruins of some dismantled fortress; a close inspection proved it to be a formation of red sandstone rock, evidently the pinnacle around which, in an-

cient days, the mighty Pacific had boiled and surged; the restless waves had washed great caverns in the very heart of the rock, until they resembled the massive portals of some grim castle. So large were these openings, that into one of them I readily rode my horse. This formation is a silent witness to the fact that in days gone by the Pacific claimed all of this country as its own, and is almost the counterpart of the celebrated La Jolla caverns north of San Diego.

Seventy miles from the summit, and 4 miles to the north of us, is the Dos Palmos stage station, upon the line of (Printed page 135) the Arizona mail route. At this place there are springs both saline and sulphurous, quite warm, and excellent to bathe in, but very poor as a beverage. Six miles further to the northeast of the stage road brings us to Brown's Gap.

The altitude is as yet undetermined, but, in approaching it from the direction of Dos Palmos, the indications are that a line could be obtained upon an unbroken, sustaining side hill. Ninety-four miles from the summit, and 4 or 5 miles to the south, we pass the mud volcanoes, 5 in number. They are found in eruption, alternately, and intermittently a cloud of white vapor like smoke rose out from their craters, and the constant deposit of material expelled forms, in time, miniature peaks from 30 to over one hundred feet in height. Want of time on my part precluded the possibility of a closer investigation of this subject.

Since leaving Cabajou valley, our line has been laid over a dreary, arid waste, not a vestige of either animal

or vegetable life; the soil either of a fine alkaline or sandy nature, cut by a drainage which looks in places formidable, but, when it is considered how dry and light the dust is, and that the whole surface of the country seems to slide like quicksand mixed with water, and at the slightest impediment washes for itself a new channel through the yielding material, a closer estimate of the requisite allowance necessary for proper drainage can be obtained. Across this desert there is no fresh water after leaving Cabajou; all of the springs are strongly impregnated with salt or sulphur. In order to obtain a supply of fresh water, either artesian wells must be bored or a condenser used.

The water at Dos Palmos is used by both men and animals, and is much more palatable than that at Fink's Springs, which is exceedingly nauseous, but would probably sustain life.

As is seen by the profile, the line passes for a considerable distance below sea level. In addition, it evidently passes across the dry bed of a salt laguna which receives the surface drainage from a large scope of territory, without having any visible outlet. In seasons when there occurs an unusual rainfall, this basin is liable to fill up more or less. I inquired carefully into this matter, and from the best information I could obtain, I (Printed page 136) judge the limits of its rise to be within 5 feet vertical; certain it is, that the stage trail between Dos Palmos and Toros crosses it in the vicinity of the lowest portion, and has never yet been interfered with by overflow. Apart from this, however, it would probably be advantageous to locate the line from Cabajou Valley via Palma Soler,

Dos Palmos and Fink's Springs, clinging to the side hill, which is even and seems to invite and aim to maintain a level grade to connect with the line at the north end of the Sand Hill range at Sta. 6,000, which is a point we will have to make. This will throw out a rise and fall of 250 feet, but will increase the cost, curvature, and length of the line somewhat. After turning the point of the sand hills near Monmouth Tank, our line is laid almost direct to Yuma through a thick growth of palo verde, ironwood and mesquite, all dwarfed, bushy trees suitable for firewood.

In this neighborhood we also find an abundance of grass, which is quite green, and grows in tufts or bunches. This cattle eat with avidity. The formation of the ground is an almost level mesa of stony material—a natural ballast, firmly compacted. The drainage is very light and tends to the south; it seems to sink before reaching the sand hills, which block our course in that direction, rising to the proportions of a formidable-looking ridge, 150 feet high.

This valley will eventually make fine grazing land if a supply of water can be obtained. There is not a spring or well in it, save the two natural reservoirs, Monmouth and Nigger Tanks, which are situated near the base of the hills, and are simply accumulations of rain water, caught in the bottom of small scoured out ravines, and is entirely unreliable.

Some few years since the Government built a corral and started to sink a well about the center of this valley. The latter undertaking was abandoned at a depth of 30

feet without achieving any results. I am, however, sanguine that a good supply of artesian water can be had by sinking to a moderate depth.

The only obstacle we encountered between this valley and Fort Yuma was the descent from the mesa to the Colorado river bottom; this, however, was successfully accomplished by the use of a moderate grade, and crossing these alluvial flats (printed p. 137) we reached Yuma upon the morning of the 17th of December, 1872, having traversed 146 miles in 18 working days.

I take this opportunity of bearing testimony to the valuable assistance which I have received from my able assistants, Messrs. J. E. Jackson and John A. Evans, and to the uniform energy and cheerful activity displayed by the other members of the corps.

The difficulties with which we had to contend cannot well be overestimated, and can be only fully appreciated by persons familiar with the locality, or accustomed to desert travel.

I am, very respectfully yours,

JOS. U. CRAWFORD,

Assistant Engineer in Charge of Party.

The great features of the desert portion of Line D is its depression below the sea level; this can be avoided in the manner set forth in Mr. Crawford's report.

The crossing of the Colorado river at Yuma is common to this Line D, and the Otay Valley Line. The Colorado river, immediately after its confluence with the Gila, cuts through a projecting spur, which seems to leave an isolated butte on the right bank upon which Fort Yuma is established.

This butte is small in extent, affording just sufficient room for the garrison. Surrounding it on all sides, save that occupied by the channel of the river, is the alluvial bottom land of the Colorado; in season of freshets, it is, in fact, an island.

A line crossing the Colorado river bottom and approaching this elevation for the purpose of crossing the river at an elevation sufficient to dispense with the necessity of a drawbridge, could only do so by means of a long, high embankment, as the uniform level of the bottom land is maintained to the foot of the slope of the butte.

The only thing suitable for the high crossing would be a suspension bridge; the direction would be slightly oblique; the span 500 feet. The objection to a pier will be found in the character of the foundation and the cramped condition of the channel, and its shifting. The bridge site, being but a few feet from the confluence of the two rivers, the channel is some (Printed page 138) times on one side and sometimes on the other—dependent upon which of the rivers may at the time be swollen by a freshet.

As the crossing of the Colorado river cannot be considered fixed until the examinations east are completed, no soundings were taken at the crossing, but there seems to be a considerable depth of shifting material at the bottom of the river.

As before referred to, a crossing of the river better suited to our direction may be found higher up, and a considerable saving of distance be effected.

In concluding the summary for this line, it may be stated that all the available openings suitable for a railroad through the mountains have been examined. The conclusion is irresistible that the best approach from the eastward to the bay of San Diego is by way of the Gorgonio Pass and the canyon of Temecula creek.

On my arrival at San Diego, in August, 1872, the impression seemed to prevail among those familiar with the mountains east of here that a more favorable line could be had across the range by dropping into Mexican territory. So general did this opinion prevail that, during the visit of the president and yourself to this coast, the conclusion to examine it was arrived at.

Before placing a party on the line, which would have required in courtesy permission from the Mexican authorities, I resolved to make a reconnoissance of the country, to see if the route was promising, and to obtain such data in the way of altitudes and distances as would facilitate the labors of the party. As several examinations of this sort have been made during the progress of our labors here, I shall designate this as

RECONNOISSANCE OF THE TIA JUANA VALLEY AND TRIBUTARIES.

Starting from the initial point, the ground occupied by the examination is common with that of the Otay Valley Line to nearly the south line of the National Rancho, or where the line turns to the left into the valley of the Otay; from thence, continuing the southerly

course, passing La Punta, we enter the valley of Tia Juana; continuing up it 4 miles, we pass the national boundary still keeping in the valley of the Tia Juana (Printed page 139) to the mouth of the San Ysidoro, or North Branch. It will be recollected that our Otay Valley line crosses this same San Ysidoro some distance above. Following up the San Ysidoro for 4½ miles, we find a canyon or gorge.

From our initial point to the mouth of this canyon is 23 miles by the route traveled. A line 20 miles in length could be had by leaving La Punta to the right, crossing the Mesa, which would prove quite practicable. Indeed, a line of easy grades and light work could be had from the place of beginning to the entrance of this canyon. Altitude of valley at lower end of gorge, 214 feet, by barometer.

The distance through the canyon is estimated to be 2½ miles; altitude of upper opening of canyon, 445 feet. The difference in height can be overcome by a grade of 100 feet per mile; or, what would be better, the shorter or Mesa line could, at the cost of additional work, be kept up on the slope and a lower gradient used to overcome this elevation. Passing this gorge, the valley of the San Ysidoro opens out, having some extent of bottom land along the margin of the usually dry bed of the stream, for a distance of 5 miles, in which distance we pass out of the valley of the San Ysidoro, taking that of Tecate creek for better location.

The ascent of the valley for this distance of 5 miles is 103 feet; making the total altitude 548 feet. At this

point the valley of Tecate creek ceases and becomes a close canyon, continuing for 2¾ miles. The difference in altitude between the opening of the gorge and the upper end, 915 feet, or 333 feet per mile; total altitude, 1,463 feet. This elevation would have to be made by any line occupying the ground examined. Starting from the upper end of the canyon, with its elevation of 1,463 feet, running back toward the Bay of San Diego, with a gradient of 100 feet per mile, would require a distance of 14 63-100 miles, which would take us back to where the line would leave the Mesa, somewhere near the crossing of Otay creek. I doubt much if sustaining ground could be had for such a gradient. Certain it is that the work would be very heavy, caused by the broken character of the slopes.

This canyon of Tecate may be considered one of the controlling points on this route. From the head of this gorge to near (Page 140) the head of San Jose Valley, an affluent of the Tecate, the distance is estimated at 12½ miles; difference in elevation, 1,482 feet, requiring a grade of 118 feet per mile. The profile would be broken, the work very heavy, as it would be necessary to cling to the lateral slopes for the entire distance.

From the head of San Jose Valley to the summit of the divide, an estimated distance of 18 miles, no difficulties occur. The elevation of summit is 3,580 feet. From thence this line would pass through a depression leading into the Carriso canyon, connecting with the Otay valley line at the head of it.

A line over the ground examined would have no advantage over the Otay Valley line in point of cost—the

only superiority would be the saving of 290 feet in the summit.

If the country covered by this reconnoissance was under the jurisdiction of our Government, and if the question of route lay between the Otay Valley line and this, it would be well to give the ground passed over a more thorough examination.

It is estimated that no saving in distance would be effected by this line over the Otay Valley line.

Table of Distance and Elevation.

Initial Point, San Diego.....	miles	16.3	feet.
Crossing of Otay creek.....10	"	25.	"
Barber's Rancho, Tia Juana Valley.. 4	"	80.	"
Bendenas, Mouth of San Ysidoro... 5	"	160.	"
Canyon San Ysidoro (lower end).... 4	"	214.	"
Canyon San Ysidoro (upper end) 2½	"	445.	"
Canyon of Tecate Creek (lower end). 5	"	548.	"
Canyon of Tecate Creek (upper end). 2¾	"	1,463.	"
Head of San Jose Valley.....12½	"	2,945.	"
Summit of Divide.....15¼	"	3,580.	"
Head of Carriso Canyon.....14¼	"	2,638.	"

In the examination of railway lines looking to the bay of San Diego as a terminus, more or less attention has been given to the route via Warner's Pass. In the matter of actual distance, a line connecting San Diego with the Colorado river at (Printed page 141) or near Fort Yuma, via this pass, would rank midway between the Otay Valley line and the line via San Gorgonio Pass.

The approach to Warner's Pass from the desert has not been looked upon with favor by engineers who have examined it. (Vide Report of Col. R. S. Williamson, Pacific Railroad Reports, and also A. B. Grey, Civil Engineer.)

The only favorable report I am aware of is that of Mr. Chas. H. Poole, made to the San Diego and Gila, Southern Pacific and Atlantic Railroad Company. I have so far been unable to find a copy of the reports in extenso. In Senate Document No. 5, Session of 1856, incorporated into the report of the surveyor general of the State of California, we find a reference to this report, and a short summary of it, with tables of grades and altitudes, over the signature of Mr. Poole, who at that time was deputy surveyor of San Diego county. I copy a part of the table:

	Intermediate Distance Miles.	Total Distance Miles.	Altitude Feet.
Bay of San Diego, Capitan Grande, Indian Village	32 3-10		727 66-100
Summit of San Isabel	18 87-100	51.17	3,360
San Jose Valley	3.44	54.61	2,768
Warner's Summit	9.27	63.88	3,630
San Felip	10.82	74.70	2,455
Entrance of Canyon	8.05	82.75	2,638
Great Lagoon	51.75	134.50	70
Mouth of Gila	66.00	200.05	180

The manner of making the examination, which I believe was instrumental, seems to have been a line run in the lowest part of the several valleys, viz., up the valley

of San Diego river to the mouth of Oakwood canyon, up that drainage to the secondary summit of Santa Isabel. In the table, of which the foregoing is an abstract, actual grades are given of 171 feet, 181 feet, 254 feet, and 452 feet per mile on the western slope; from the information thus obtained a deduced grade of best observed location is obtained of 107 feet per mile. The secondary summit of Santa Isabel, which separates the drainage of the San Diego river from that of Warner's Pass, which flows into the San Luis Rey river, and the San *Bernardo* is a controlling point as (Printed page 142) to grade, assuming that the summit can be lowered by cutting 40 feet, making the elevation of grade 3,320 feet; a gradient of 100 feet per mile would have its footing some 6 or 7 miles down the Indian Village of Capitan Grande, and would require to be continuous for 26 or 27 miles. As this would be side-hill work for the entire distance, and over broken slopes cut up by deep lateral ravines, they would be in character similar to that on the Otay Valley Line.

It is quite evident from Mr. Poole's table and corroborated by our own examinations that the natural approach to Warner's Pass is not by the drainage of the San Diego river, but rather by the San Luis Rey.

The summit of Warner's Pass is given by Mr. Poole as 3,629.56 feet. Colonel Williamson gives the altitude as 3,780, which nearly agrees with our observations in the vicinity. As the latter are barometric and the former supposed to be obtained by actual survey, it is presumed to be the most correct.

A line via the San Diego river and Warner's Pass would give a greater amount of elevation and depression than our Otay Valley line, caused by the Santa Isabel summit on the western slope, and the San Felip summit on the eastern, both of which are additional and unavoidable. Reports having reached me of a summit north and east of Warner's Pass, which promised an opening to the desert, I instructed Mr. A. P. Wood, principal assistant engineer, to examine it and take with him a guide who, from having lived in the vicinity, was supposed to have an accurate knowledge of the country. Mr. Wood's report is submitted. It will be gathered from it that the proper and natural outlet to the coast from Warner's Pass, and also the pass which he examined, is via the drainage of the San Luis Rey river, which would dispense with all secondary summits and give a continuous descent from the summit to the sea.

J. A. Evans, Eng'r Cal. Div. T. & P. Railway.

Dear Sir: I herewith submit a report of an examination made by me, according to your orders of Oct. 20th, 1872, of a pass in the Sierra Nevada mountains, situated at the head of (Printed page 143) the San Luis Rey river, and about 2 miles north and 5 miles east of Warner's Pass; also of the country east of the pass leading down to the desert, and from the same point westward, down the valley of the San Luis Rey river to the ocean, with a view of ascertaining its practicability as a railroad route.

I reached the neighborhood of the pass on Oct. 28th, accompanied by John Warner, as guide. The pass is a

gap from 3 to 4 miles wide, the mountains rising abruptly on either side. The surface of the country is smooth, gradually ascending from the west to the summit, where I found, by barometric observation, the elevation to be 3,900 feet. At the north of the pass the descent eastward is, in many places, precipitous. By an observation, taken on an arm of the desert, I found the fall to be 3,000 feet in a distance of 7 miles.

On the north side the pass leads into a canyon, which I followed to where its drainage enters San Felip creek at the lower end of San Felip canyon. The distance from the summit of the pass to this point we estimated to be 10½ miles. The descent in the first 2½ miles from the summit is 710 feet; in the next 3 miles it is 775 feet; and from thence, for a distance of 5 miles, 130 feet per mile or 650 feet. This rapid descent of the canyon would necessitate keeping a line on the side of the mountain. On the side of the mountain separating this canyon from the San Felip Valley, I think sustaining ground can be found for a line of practicable grades and curves.

Though I am of the opinion that a grade of 116 feet per mile from the summit would necessitate crossing a low place in the mountains into the valley of the San Felip, and to get out of this valley with a line of the same grade, a line would have to follow the mountains back in the direction of Warner's Pass for some distance, and thence bear south and east along the mountains on the south side of the valley.

This would involve a great amount of curvature, and the work would be of a very heavy character, as the sides

of the mountains are cut up by deep, lateral canyons and sharp spurs composed of solid rock. The surface of the country is covered with granite rock, which appears to be rapidly disintegrating. There is scarcely any growth of vegetation here.

(Printed page 144.)

From the summit of the pass, westward, down the valley of the San Luis Rey, I found an entirely different country. According to barometric observation, the descent does not exceed 100 feet per mile for any part of the first 15 miles from the summit west. The country is a smooth valley, varying in width from ¾ to 3 miles, and well watered.

At this point the stream leaves the valley of Warner's Pass, and enters San Jose Canyon. In a distance of 16 to 18 miles, this canyon descends 1,720 feet. The sides of the mountain to the south of the stream is comparatively smooth and favorable for the construction of a railroad.

After leaving the canyon there are no difficulties in the way between that point and the ocean, as a line would follow the valley of the San Luis Rey. Good alignment can be had from the summit to the ocean. The course of the stream is from east to west, and it is comparatively free from sharp angles.

There is a good supply of timber for fuel—not for other purposes—on the sides of the mountains, from the summit to the mouth of San Jose canyon, and an abundant supply of good water from the summit, west. I found a few springs of pure water on the desert side,

though I doubt the supply being sufficient for railroad purposes.

Respectfully yours, etc.,

A. P. WOOD,
Prin. Asst. Engr.

It would seem from the examinations of Mr. Wood, that the pass, north and east of Warner's Pass, is less advantageous than Warner's, as in making the descent from it towards the desert it would be necessary to make the detour back into the valley of the upper San Felip and surmount the secondary summit between the drainage of San Felip and the Carisso. It would seem, by comparing authorities, that the summit is higher than that of Warner's Pass. It is presumed, further, that the line indicated by Mr. Poole would exceed in elevation and depression, as well as in distance and grade, the Otay Valley line; it need not, therefore, be used in a comparison with our northern lines, via San Gorgonio Pass.

(Printed page No. 145.)

The openings or passes in the range east of San Diego, may be summarized as follows:

Name of Pass.	Altitude. Feet.	Natural Approach to.
1. San Gorgonio	2,521	Coast Line, Temecula Canyon, and Potrero of San Jacinto.
2. Warner's Pass	3,630	Coast Line and San Luis Rey Valley.
3. Pass near Warner's	3,900	Coast Line and San Luis Rey Valley.

4. Volcan Pass	3,850	San Diego river and Trib.
5. Head of Pine Valley	4,700	Otay creek and Cottonwood Val.
6. Walker's Summit	3,870	Otay Creek, Bear Canyon, and Melquate Creek.
7. Los Huntos' Summit, Mexico	3,580	Tia Juana Valley, San Ysidoro and Tecate creek.

The impracticability of the summits 4 and 5 consists largely in the difficulty in reaching the desert, the direction of the descent being directly east, and not parallel with the direction of the range, as is the case with the approach to Warner's Pass and Walker's summit.

Terminus of San Diego.

The Texas and Pacific Railway Company has acquired title to two leagues of land, in the vicinity of the bay, 700 acres of which lies in a compact body, contiguous to the best and most accessible part of the ship channel on the eastern shore of the bay. This tract is conveniently situated for the location of depots and shops, requiring little or no grading for that purpose.

By reference to the map it will be seen that a spur line from our Line D, diverging near Old San Diego, would make available for business the basin inside of Ballast Point, and in front of La Plaqua. This spur will cost but little to grade, and if required, dockage could be

made there with little expense, so as to place cars within reach of ship tackles.

It may be mentioned, as one of the advantages of the northern line, that all approaches to it from any point of the bay will prove to be simply extension of line, as opposed to lengthy detours.

In conclusion, I beg to refer to the valuable aid received from Mr. A. P. Wood, principal assistant, upon whom has devolved most of the labor of preparing the estimates, and to Mr. J. U. Crawford, by whom much of the labor of developing the line via Gorgonio Pass was performed. (Printed page No. 146.) That we are able to give the results so soon is due in no small degree to the activity displayed by him in his allotted part of the work, and to Mr. C. J. Fox, who also developed some of the most important lines leading to San Gorgonio. Mr. Fox's labors were conducted with great care, and whatever part of them may be adopted, much labor will be saved in future location.

To Mr. J. H. Reno, upon whom devolved the most difficult and discouraging part of our surveys, much credit is due. In the month of July, 1872, he managed to keep the party together under difficult circumstances, although not then in full charge of it.

From Mr. C. P. Taggart, to whom I was referred to for advice in all legal matters, I have received valuable assistance and counsel.

Respectfully submitted,

JAMES A. EVANS,
Engr. Cal. Div.

Mr. CALL.—I request the special examiner, after copying the portions of the book heretofore offered in evidence by me, to carefully compare the same with the original, and to certify to the accuracy of the copy so compared.

I, William Herbert Smith, special examiner and stenographer, duly appointed by virtue of an order of the Circuit Court of the United States, for the Southern District of California, 9th Circuit, do hereby certify that in accordance with the request of counsel for the complainant, above noted, I have compared the portions of the said report offered in evidence with the original printed copy thereof, produced by the above-named witness, and that the same is a true and correct transcript therefrom in every particular.

_____

Special Examiner and Stenographer.

By Mr. CALL.—Q. Do you know of anything else of interest concerning the making of this report and the filing of it with the company?

A. No; I can't say that I do. I distinctly remember the report and the fact of my having copied it and gotten it up, so that I can testify to its completeness. It is a report that has been very highly spoken of, and has been accepted as a model of its kind.

Q. From what date was the report prepared?

A. From the reports of the division engineers, made to the chief engineer.

Q. Including the reports of Mr. Evans and Mr. Crawford? A. Yes.

Q. Do you still occupy the same business relations with Gen. Dodge that you did in 1873? A. I do.

Q. And have you so acted since that time?

A. Ever since that, with a few slight interregnums, when Gen. Dodge was absent in Europe or elsewhere.

Q. State whether or not you know that Gen. Dodge signed the original report of 1874, which he furnished to the Texas & Pacific Railway Company.

A. He did. I distinctly remember that he signed it with his own hand and in his own handwriting.

JOHN T. GRANGER.

Subscribed and sworn to before me this 17th day of December, A. D. 1896.

WM. HERBERT SMITH,
Special Examiner and Stenographer.

It is understood that the defendant reserves all objection to the foregoing testimony of the witness above named, as to its competency and relevancy.

And thereupon the further taking of these depositions was adjourned until Tuesday, November 24th, at 3:15 o'clock P. M., at the rooms of J. H. Call, in the National Hotel, Washington, D. C.

Washington, D. C., November 24, 1896,
3:15 o'clock P. M.

Met pursuant to adjournment, at the rooms of J. H. Call, National Hotel, Washington, D. C., when were present on behalf of the complainant, Joseph H. Call, special assistant United States attorney, and no appearance on behalf of the defendants. Whereupon, the further taking of these depositions was, by consent of counsel for the re-

spective parties, adjourned until Wednesday, November 25, 1896, at 1:30 o'clock P. M., at the same place.

Washington, D. C., November 25, 1896.
1:30 o'clock P. M.

Met pursuant to adjournment at the rooms of J. H. Call, National Hotel, Washington, D. C.

Whereupon the further taking of these depositions was, by consent of counsel for the respective parties, adjourned until Saturday, November 28, 1896, at 2 o'clock P. M., at the same place.

Washington, D. C., November 28, 1896.
2 o'clock P. M.

Met pursuant to adjournment at the rooms of J. H. Call, National Hotel, Washington, D. C.

Whereupon the further taking of these depositions was adjourned until Thursday, December 3, 1896, at 10 o'clock A. M., at the same place.

Washington, D. C., December 3, 1896,
10 o'clock A. M.

Met pursuant to adjournment at the rooms of J. H. Call, National Hotel, Washington, D. C.

There being no appearance by counsel for the respective parties, or by the parties, the taking of the testimony in th above-entitled cause before me was thereupon closed.

I, William Herbert Smith, special examiner and stenographer in the above-named consolidated causes, under and by virtue of an order issued out of the Circuit Court of the United States of America, Ninth Circuit, for the

Southern District of California, on the 5th day of October, A. D. 1895, a certified copy of which is hereto attached, do hereby certify that, pursuant to the said order of appointment and the annexed notices to take testimony in said cause, I took the testimony of the above-named witnesses, Charles E. Satterlee and John T. Granger, at the several times and places in said depositions mentioned, and in the manner therein described, which said testimony was taken down by me in shorthand and correctly reduced to typewriting, under my direction, and at the request of counsel for the United States, by consent of counsel for the defendant; and that I elected to so take the said testimony as being more convenient for me.

I further certify that the testimony of each of the said witnesses, after the same was reduced to typewriting, as aforesaid, was read over by them, and each of them, and was by them, and each of them, duly subscribed and sworn to in my presence.

I further certify that each of the said witnesses was by me first duly sworn to testify the truth, the whole truth, and nothing but the truth.

I further certify that the documentary evidence, excerpts from which were introduced in evidence by counsel for the respective parties, has been transcribed and appears as above set forth, and that the same has been carefully compared by me with the originals of the said documents so offered in evidence, and that the same have been carefully and accurately copied as above set forth.

Witness my hand, this 31st day of December, A. D. 1896.

WM. HERBERT SMITH,

Special Examiner and Stenographer in said Causes.

[Endorsed]: Opened and filed Mar. 4, 1897. Wm. M. Van Dyke, Clerk.

In the United States Circuit Court, for the Southern District of California, Ninth Circuit.

THE UNITED STATES,
Plaintiffs,
vs.
THE SOUTHERN PACIFIC RAILROAD COMPANY, D. O. MILLS and HOMER S. KING, Trustees, THE CENTRAL TRUST COMPANY OF NEW YORK, THE SOUTHERN PACIFIC COMPANY OF KENTUCKY, and THE COLORADO RIVER IRRIGATION COMPANY,
Defendants.
Consolidated Nos. 675, 587, and 662.

Testimony.

Testimony, by deposition, taken at Dallas, Texas, on behalf of the United States in the above-entitled cause, before G. W. Parker, special examiner and stenographer. Said deposition being taken in pursuance of the foregoing and annexed order of the United States Circuit Court for the Southern District of California, appointing said G. W. Parker such special examiner and stenographer, and

in pursuance of the foregoing and annexed notice fixing the time and place for taking said deposition, duly served upon the attorneys and counsel for the defendants, and in pursuance of the foregoing and annexed order fixing the length of time for making service upon the defendants of the taking of said deposition.

On this, the 17th day of June, A. D. 1897, at the office of the United States attorney, in the city of Dallas, Texas, between the hours of 10 o'clock A. M. and 4 o'clock P. M., there appeared before me Sam. A. Leake, on behalf of the United States, and D. R. Sessions, on behalf of the defendants in said cause; and thereupon, by consent of the parties, the hearing was adjourned to the office of Major B. S. Wathen, chief engineer of the Texas & Pacific Railroad Company in the said city of Dallas, and thereupon the following proceedings were had:

By request of counsel for both sides, the examination of the witness hereinafter named was had orally, and was taken down by me in shorthand, to be hereafter reduced to typewriting by me, and it was further agreed that one copy of same should be furnished to each of counsel.

B. S. WATHEN, being by me first duly sworn and cautioned to testify the whole truth, was examined, and in answer to the following interrogatories, testified as follows:

Q. Please state your name and present occupation.

A. B. S. Wathen; I am chief engineer of the Texas & Pacific Railway Company.

Q. What was your occupation in the years 1880 and 1881?

A. I was chief engineer of the Texas & Pacific Railway Company in 1880, and part of 1881.

Q. State who was engineer in charge of the surveys of the Texas & Pacific Railway Company in the years 1875 and 1876.

Mr. SESSIONS.—I wish to inquire whether you are asking for the actual knowledge of the witness.

Mr. LEAKE.—I understand that is all he can testify to.

WITNESS.—I was making surveys for the company in the years 1876 west of Ft. Worth; I don't know who else was making surveys in those two years.

Q. Then state what surveys you made.

A. I only made surveys between Ft. Worth and the Brazos river during that year.

Q. Who was chief engineer of the Texas & Pacific Railway Company during the years 1872, 1873, and 1874?

A. General G. M. Dodge.

Mr. SESSIONS.—Is that of your own knowledge?

A. Yes, sir; I had knowledge of it. I was associated with him sufficiently to know it.

Mr. LEAKE.—State who had charge of all the surveys of the company during these three years.

A. General Dodge was engineer in chief, but who had charge of the actual work in the field I don't know all the parties; I know some of them.

Q. Please state if you knew James A. Evans.

A. Yes, sir; I knew him in the year 1871.

Q. What was his occupation?

A. At that time he was connected with the International Railway Company of Texas as engineer.

Q. State whether or not he was ever connected with the Texas & Pacific Railway Company at any time. If so, in what capacity?

A. I was told that he was connected with the Texas & Pacific as engineer in charge of the California division in 1872, but had no personal knowledge of the fact.

Q. Who has charge of the archives, records, and maps that belong to the Texas & Pacific Railway Company, relating to the surveys of said company?

A. They are in charge of the chief engineer, myself.

Q. Then you have charge of them?

A. Yes, sir.

Q. State whether or not you have in your office, as chief engineer of said company, any maps showing surveys from Pima villages, Arizona to San Diego, California, one from Fort Yuma on the Colorado to Pima villages, and another showing various surveys in California between San Diego and points east of the mountains?

Mr. SESSIONS.—I would ask again whether the witness is speaking of his own knowledge as to what these maps are, or whether he is testifying as to what they purport to be.

A. I have no direct knowledge except as to what the maps show by themselves, and the verbal information of the assistant chief engineer at the time the maps were made, or about the time the maps were made.

Q. How long have these maps been in the office of the chief engineer of the Texas & Pacific Railway Company?

Mr. SESSIONS.—I would like to ask again if the witness is speaking from actual knowledge.

A. I don't remember to have seen these maps prior to or about the latter part of 1879, or first of 1880.

Q. State whether or not they appear to be fresh maps or ancient documents, and whether or not they are discolored and worn with age.

A. They are not fresh maps; they show considerable abuse and discoloration.

Q. State what these three maps show regarding the surveys made by the said Texas & Pacific Railway Company.

A. They show that there were some surveys made by the Texas & Pacific between Ft. Yuma, on the Colorado river, Arizona, and San Diego, California.

Q. Between what years?

A. The surveys between Fort Yuma and Pima villages were made prior to 1873.

Mr. SESSIONS.—That is, they purport to show that?

A. Yes, sir.

Q. State whether or not you ever made a careful examination in your office for any other maps showing surveys made west of the Colorado river except those produced.

A. Yes, sir; we have had search made for other maps, and don't find any.

Q. State whether or not said maps appertain to the said Texas & Pacific Railway Company.

A. The maps purport to be a record of the surveys made by the Texas & Pacific Railway Company over that

territory; I had nothing to do with making the maps or making the surveys.

Q. State whether or not they are original documents.

A. The maps are seemingly originals of these surveys.

Q. State whether or not they are used and kept by the Texas & Pacific Railway Company as original maps of these surveys.

A. They were so considered by the engineering department of the Texas & Pacific.

Q. State whether or not you, as custodian of these maps, will allow them to pass out of your possession.

A. I don't wish them to.

Q. State whether or not you have examined any copies or tracings of said original maps and have compared them with the said originals.

A. Yes, sir; I am satisfied these were traced from blue prints I gave Mr. Call, special attorney for the United States.

Q. They are correct tracings, are they not?

A. I think they are correct.

Q. I would like you to compare these with the originals in this office as well as you think necessary.

A. I have looked at the originals recently, and I think these are very approximate, if not exact, tracings of the originals from which I gave Mr. Call, or what purport to be the originals. These are copies of the blue prints which I gave Mr. Call, special attorney for the United States, from maps of that district as found in this office, and which purport to be surveys for the Texas & Pacific Railway Company for the district called for.

Q. State whether or not the blue print you furnished Mr. Call were correct copies of the three maps above referred to.

A. They were photographed, and therefore correct.

Q. State whether or not the exhibits that are attached are correct tracings of the three maps above referred to.

A. They are substantially correct, if not exact.

Mr. LEAKE.—The first map there is marked "Texas & Pacific Railway Company, California division, map of surveys between Pima villages, Arizona, and San Diego, California," and also endorsed "Marshall, Texas, April, 1873, G. M. Dodge, Chief Engineer." I will ask the examiner to identify that map by marking his initials upon the corner. The next map we introduce shows a line commencing at the east line of range six, and running thence to the Pacific Ocean, and shows the line of route by San Gorgonio Pass and Line D to San Diego.

Q. State what that map represents.

A. This map represents a section of California, bordering on Lower California.

Q. What does it represent regarding the surveys?

A. It purports to represent the surveys made for the Texas & Pacific Railway Company for that section of California.

Q. When? A. Between 1871 and April, 1873.

Mr. LEAKE.—The examiner will please identify this map by his initials.

Q. The next map produced is marked "Texas & Pacific Railway, Arizona Division, from Fort Yuma to Pima villages. Please state what that map represents.

A. This map represents a portion of Arizona, extending from Ft. Yuma, east to Old Pima villages, and purports to show surveys made for the Texas & Pacific Railway Company, between the years 1871 and April, 1873.

Mr. LEAKE.—The examiner will please mark this map so as to identify it as such.

Q. You stated that these maps were somewhat discolored; state whether or not they are intelligible.

A. Yes, sir; they are intelligible.

Mr. LEAKE.—I offer these maps in evidence, and request the examiner to mark them as Plaintiff's Exhibits 1, 2, and 3, respectively.

Plaintiff rested.

Cross-Examined by Mr. SESSIONS.

Q. Major, your first connection with the engineering department of the Texas & Pacific Railway, as I understand you, was in 1876, or about that time?

A. About that time; I did a little work for that railway earlier than that.

Q. Had you any knowledge whatever, except hearsay, of the surveys made in California prior to 1876?

A. No, sir; I was never in California in my life.

Q. Your operations, then, had been confined up to that time to territory east of Ft. Worth, or east of the Brazos river? A. Yes, sir.

Q. What you have said then with regard to any maps or surveys purporting to have been made previous to 1876 is not stated as to your own knowledge?

A. It is not stated as work done by me, or in which I had any direct part; my information come from those

that were engaged in making the surveys in part, and partly by those who were in charge of the engineering affairs of the Texas & Pacific Railway at that time.

Q. Your information in regard to those matters rests upon the statement of others? A. Yes, sir.

Q. You were chief engineer for this company for the years 1880 and 1881?

A. I was all of 1880, and part of 1881.

Q. Previous to that time you had no knowledge of any maps or surveys made in California and Arizona other than what you have testified to? A. No, sir.

Q. When did you first become custodian of the maps and surveys of the company?

A. It was in the early part of the year 1880 that I was appointed as engineer for the company, and became custodian of those records.

Q. Did you have occasion to examine all, or most of your records during that period of your official connection with the company?

A. I looked over all, or nearly all, of the maps and profiles of survey during the time I was chief engineer.

Q. Is there any mark or positive means in existence by which you can determine absolutely the original character of these maps?

A. I put no private mark on any of them; I am fully satisfied that these maps are the ones I examined 16 or 17 years ago.

Q. I have reference in my question to the time at which you first examined them—say in 1880?

A. I had no better knowledge of their being what they purported to be at that time than I have now.

Q. Major, is there any mark on any of these maps in the handwriting of any officer of the company whose handwriting you are familiar with that would indicate to you positively that any of these surveys were made by him, or under his direction or control?

A. There is no signature or mark that I know of that would fix that point positively.

Q. For example, is General Dodge's signature on any of these maps? A. I fail to see it.

Q. Is the signature of any other officer in charge of the surveys on any of these maps?

A. I think not.

Q. Major, where have these maps and surveys been kept?

A. At the time I first saw them they were in Marshall, Texas; that was in 1880; I found them in Dallas, Texas, when I was reappointed chief engineer in 1892.

Q. Were not these records kept for a period of years at the company's general office in Marshall, Texas?

A. Yes, sir; that is my understanding—that is, I found them there at a certain period and understood they were kept there until the general offices were moved to Dallas in 1886.

Q. After you became chief engineer stationed at Dallas—that is, subsequently to 1892, did you not send to Marshall to have whatever papers were there, or papers of the kind described, brought to your office here?

A. Yes, sir; I sent over there and found papers which

were missing among the records which we wanted and found some.

Q. When you first saw the records of the office, such as are in consideration here, were they of considerable bulk—about what space?

A. Do you mean the records of the territory in question?

Q. No, the general map and surveys.

A. There was quite a large number of the maps and profiles.

Q. About how much space would they occupy? Would they fill a box-car?

A. No, sir; they would not fill a box-car, but it would require a room, I should say 10x12 or 15 feet, to properly store them.

Q. When you gathered these papers together, about what space would they occupy?

A. A small box would hold all we found when we went back to look for the missing records.

Q. A box of what dimensions?

A. A box 3x4 by 3½ or 4 feet deep.

Q. Is it not true that for a period of time that these records were kept in what had been a hospital of the company at Marshall, and that the house was in such a condition that it could be easily entered by the doors and windows by boys, and were not a great many of these archives, maps, profiles, and surveys destroyed or carried away? A. That is my information.

Q. Your information as an officer of the company?

A. Yes, sir.

Q. Was it not true that the records and papers before you came into office had been left in this hospital building which had been practically abandoned for use by the company? A. Yes, sir; that was the case.

Q. From your general knowledge of maps, profiles, and surveys pertaining to the California division of the road as projected, are you not aware that some, and probably a great deal, of this date is disappeared?

A. Yes, sir.

Q. Is it not possible that maps that would shed light modifying what the present maps show were destroyed in the abandoned building at Marshall, Texas?

(Plaintiff excepts to the form of the question upon the ground that this is an opinion of the witness.)

Mr. SESSIONS.—State what your knowledge, as an officer of the company, was with regard to the disappearance of a large number of this data.

A. When I became engineer in charge in 1880, it was then believed that the Texas & Pacific Railway would be constructed through to the Pacific Coast to San Diego, and as engineer in charge I looked up the maps, profiles, etc., pertaining to the old surveys which had been made some years prior, and remember a very large number of maps and profiles in connection with the surveys west of El Paso which totally disappeared. I have no knowledge of whatever became of them, but assume they were lost by being left in the old hospital building at Marshall, Texas, which for a time had been abandoned, by reason of the company having built a new hospital and the old

building was not torn down or wrecked for some considerable time after the building of the new hospital.

Q. Counsel for the plaintiff has asked you, Major, with regard to one James A. Evans, who, as I understand it, you stated to be the engineer in charge of the California division of the surveys of the Texas & Pacific Railway Company; was Mr. Evans a competent engineer?

A. Yes, sir.

Q. And he had charge of these surveys on that division? A. That was my information.

Q. Your information as an officer of the company?

A. Yes, sir; that is, I was not an officer of the company at the time he was in charge of these surveys; that information came to me later when I became an officer of the company, when these surveys were made under the charge of James A. Evans—that is, the actual surveys in California.

Q. And in that connection you knew Mr. Washburn —Mr. D. W. Washburn?

A. Yes, sir; Mr. Washburn was the assistant chief engineer under General Dodge for several years, and I took his place when he resigned in 1880, and my association with him from 1871 up to the time I took his place. I talked with him officially about matters regarding surveys generally; he was the chief engineer, and had asked me to take charge of the survey from Fort Worth to the Pacific coast in case the line should be built, as he fully expected to be chief engineer of the company himself, but when the work was started from Fort Worth west, a construction company was formed and he was offered the

place of chief engineer for the construction company, and when he resigned from the place of chief engineer for the railroad company I was appointed in his stead, in the meantime General G. M. Dodge having resigned to become president of the construction company, and a number of these years I was associated with him in various ways, and talked over frequently with him about these western surveys while he was acting as engineer in chief.

Q. Mr. Washburn had some familiarity with the work done in California?

A. Yes, sir; he was for quite a time assistant chief engineer and was as familiar with the facts as any one who had not been on the ground and had not done any work.

Q. Did he derive any information by way of reports coming to him from James A. Evans?

A. I think James A. Evans reported directly to General Dodge, and the reports would necessarily be used by the assistant chief, and it was based on these reports that he discussed these matters.

Q. Was it not Mr. James A. Evans' opinion in his official reports that the most feasible route to San Diego was by the straight course and direct short line, unless perhaps a line deviating south for a short distance into Lower California coming up through the Tia Juana canyon?

A. I cannot speak positively as to that, because I never saw Mr. Evans' report, but from the examination I made of the profiles and maps it was the general impression that a fairly good route could be had on a direct line.

Q. Have you had any occasion to use the maps in evidence for any construction purposes?

A. No, sir.

Q. So far as your knowledge of them extends you simply assume that they have been continuously in your possession? A. In the custody of this office.

Q. In regard to the appearance of these maps indicating age, as suggested by counsel for the plaintiff, are they made of such excellent paper that they might not appear old at the end of a few years considering the usage they subjected to in the abandoned hospital?

A. The maps were made of very fair quality of tracing paper; tracing paper, however, is very easily stained and abused, and a map can be made to look very old when made of that class of paper, in a short time.

Q. Have you ever had any occasion to use these maps considered as originals—maps of surveys in California for your company?

A. No, sir; I never had any occasion to use them.

Defendants rest.

Redirect Examination.

Q. Major, you stated on cross-examination that there were some records lost out of the old building in Marshall showing profiles, maps, etc., west of El Paso; state whether or not these records appertain to surveys that were made west of the Colorado river?

A. Yes, sir; I examined the maps and profiles of the line between San Diego and the Colorado river at one time, and those profiles cannot be found. I am not abso-

lutely certain whether there were other maps than the ones we now have or not; it has been quite a long time ago, but my recollection is that the maps I examined were on paper, and not tracings—covering this very territory.

Q. Your impression is now that the records that were lost were the profiles and not maps?

A. They were both, because the originals from which the tracings were made were certainly in existence at one time, and those are the ones that I think I examined instead of the tracings. I have a very distinct knowledge of having looked over the maps and profiles of what we knew as the southern line.

Q. Then you mean to say that the three maps which are attached hereto as exhibits are the tracings of the original maps that were made of these surveys west of the Colorado river?

A. Yes, sir; that is my inference.

Q. You are now testifying in regard to your recollection of the maps in the hospital building at Marshall?

Q. Yes, sir; I remember these old maps, and looked over them at one time.

Q. Your recollection now is that the maps from which these copies you have testified about were traced were lost out of the hospital building at Marshall?

A. Yes, sir; that would be my impression.

Q. You know you have completely lost profiles and maps of surveys west of the Colorado river?

A. Yes, sir; we cannot find them in this office.

Q. Major, state whether or not the maps—the three maps that you have referred to that are now in your pos-

session—have in any way been altered or changed since 1880.

A. I cannot remember that they have been changed. My impression is that they have not been changed except by abuse.

Q. How long have you been a civil engineer?

A. Since 1865.

Q. State whether or not the three maps that you have testified about are old looking from age, or whether they are new maps and look old by reason of abuse.

A. My impression is that they are what they purport to be—that they were made in the year 1873; I have no means of knowing positively about the matter.

Q. State whether or not these maps are kept by you as chief engineer of the company as original drawings of these surveys.

A. I kept them upon the idea that they are what they purport to be—tracings from the maps of the original surveys; I don't say what they are; I say that is what they purport to be.

Both sides closed.

B. S. WATHEN.

I further certify that said testimony of said witness was taken down by me in shorthand and reduced to typewriting, and was then read over to the said witness and corrected by him, and thereupon the said witness subscribed his name thereto, and the same was then sworn to by him before me.

Witness my hand at the city of Dallas, State of Texas, this the 18th day of June, A. D. 1897.

G. W. PARKER.
Special Examiner and Stenographer.

In the United States Circuit Court, for the Southern District of California, Ninth Circuit.

THE UNITED STATES, Plaintiffs, vs. THE SOUTHERN PACIFIC RAILROAD COMPANY, D. O. MILLS and HOMER S. KING, Trustees, THE CENTRAL TRUST COMPANY OF NEW YORK, THE SOUTHERN PACIFIC COMPANY OF KENTUCKY, and THE COLORADO RIVER IRRIGATION COMPANY, Defendants.	Consolidated Nos. 587, 675, 662

Notice for Taking Deposition.

To the defendants in the above-entitled cause, and to Walter J. Trask, Lewis E. Payson, William Singer, Junior; William F. Herrin, W. H. H. Hart, Page, McCutcheon & Eells and Butler, Notman, Joline and Mynderse, attorneys and counsel for said defendants:

You will please take notice that on the 17th day of June, A. D. 1897, at the office of the United States attorney, in the city of Dallas, State of Texas, between the hours of 10 o'clock in the forenoon and 4 o'clock in the afternoon, the United States will take the testimony of B. S. Wathen and others in the above-entitled cause before G. W. Parker, Esq., special examiner and stenographer thereunto appointed by the United States Circuit Court for the Southern District of California.

Said testimony will be taken orally, and in pursuance of an order of said special examiner will be taken down in shorthand.

The taking of said testimony will be continued from time to time and from place to place in said city of Dallas as may be determined by said special examiner.

You are requested to appear and cross-examine said witnesses.

JOSEPH H. CALL,
Special United States Attorney.

State of California,
County of Los Angeles. } ss.

Bert E. Vickrey, being first duly sworn, deposes and says: That on the 8th day of June, A. D. 1897, he served the foregoing and annexed notice of taking of depositions upon the above-named defendants, and upon their respective solicitors and counsel, as follows:

That he served said Walter J. Trask, as attorney and counsel for said defendants, by personally delivering to R. W. Darby, clerk of said Trask, at the office of said Trask, in the city of Los Angeles, California, a copy of the

foregoing and annexed notice on said 8th day of June, 1897, the said Trask being absent from said city of Los Angeles and from the Southern District of California.

That each of said defendants in said cause is a nonresident of the Southern District of California.

That each of said solicitors and counsel for said defendants is a nonresident of the Southern District of California, except said Walter J. Trask.

That neither of said solicitors or counsel has designated any place where service may be made upon them, or either of them, in said city of Los Angeles, California, as required by the rules of this court.

That service was further made upon said parties defendant and their solicitors and counsel by filing and depositing in the office of the clerk of the United States Circuit Court for the Southern District of California an original duplicate of said notice on the 8th day of June, 1897.

That service was further made upon said defendants upon said 8th day of June, 1897, by my mailing a true copy of said notice to William Singer, Jr., as solicitor and attorney for said defendants, addressed to him at San Francisco, California, where he resides, and deposited in the United States postoffice under cover of an official envelope. BERT E. VICKREY.

Subscribed and sworn to before me this 8th day of June, A. D. 1897.

[Seal] GEORGE L. KEEFER,

Notary Public in and for the County of Los Angeles, State of California.

[Endorsed]: Original. In the U. S. Circuit Court, So. District of California, Ninth Circuit. The United States vs. The Southern Pacific Railroad Company et al. Notice for taking depositions.

Whereas, I, G. W. Parker, was, on the 1st day of June, 1897, appointed a special examiner and stenographer by the United States Circuit Court for the Southern District of California, to take the testimony at Dallas, Texas, in the case of United States against the Southern Pacific Railroad Company and others, as more fully appears from the foregoing and annexed order of said court; and,

Whereas, Joseph H. Call, Esq., special United States attorney in said cause, has requested that the testimony therein and to be taken before me shall be taken down by a skillful stenographer, or by a skillful typewriter, as may be determined by me, and has further requested that I, as such special examiner, should fix a reasonable time for the giving of notice to the counsel and solicitors for the defendants for taking such testimony;

Now, therefore, in pursuance of the foregoing order of said court, appointing me such special examiner and stenographer, and in pursuance of said application and request, it is ordered that the testimony in said cause, to be taken before me as aforesaid, shall be taken orally and taken down by me as such stenographer, and that at least eight (8) days' notice of the time and place for taking such testimony shall be given by the counsel for the United States to the solicitors and counsel for said defendants, and that such notice may be given in accord-

ance with the rules of the United States Circuit Court for the Southern District of California.

Witness my hand at the city of Dallas, Texas, this 7th day of June, A. D. 1897. G. W. PARKER,

Special Examiner and Stenographer.

[Endorsed]: Consolidated Nos. 675, 587, and 662. In U. S. Circuit Court, Southern District of Cal. United States vs. So. Pac. R. R. Co.

At a stated term, to wit, the January term, A. D. 1897, of the Circuit Court of the United States of America, of the Ninth Judicial Circuit, in and for the Southern District of California, held at the courtroom in the city of Los Angeles, on Tuesday, the first day of June, in the year of our Lord one thousand eight hundred and ninety-seven. Present: The Honorable ERSKINE M. ROSS, Circuit Judge.

THE UNITED STATES OF AMERICA,
Complainants,

vs.

THE SOUTHERN PACIFIC RAILROAD COMPANY, D. O. MILLS and HOMER S. KING, Trustees, and THE CENTRAL TRUST COMPANY OF NEW YORK, THE SOUTHERN PACIFIC COMPANY OF KENTUCKY, THE COLORADO RIVER IRRIGATION COMPANY,
Defendants.

Nos. 675, 587, 662 Consolidated

Order Appointing Special Examiner.

Upon motion of Joseph H. Call, Esq., special assistant United States attorney, and good cause appearing therefor, and no objection being made by defendants, it is ordered that G. W. Parker, Esq., of Dallas, Texas, be, and he is hereby, appointed a special examiner and stenographer of this court to take testimony in said cause at Dallas, Texas, said testimony, when so taken, to be transmitted to this court in accordance with the rules of court.

I, Wm. M. Van Dyke, clerk of the Circuit Court of the United States, for the Southern District of California, do hereby certify the foregoing to be a full, true, and correct copy of an original order made and entered by said Court

June 1st, 1897, in the cause entitled The United States of America, Complainants, vs. The Southern Pacific Railroad Company et al., Defendants, Nos. 675, 587, and 632, Consolidated, and remaining of record therein.

Attest my hand and the seal of said Circuit Court, this 3rd day of June, A. D. 1897.

[Seal] WM. M. VAN DYKE,
Clerk.

[Endorsed]: Nos. 675, 587, and 662, Consolidated. U. S. Circuit Court, Ninth Circuit, Southern District of California. The United States of America vs. The Southern Pacific Railroad Company et al. Certified copy of order appointing G. W. Parker, Esq., a special examiner. Deposition of B. S. Wathen. Opened and filed June 28, 1897. Wm. M. Van Dyke, Clerk.

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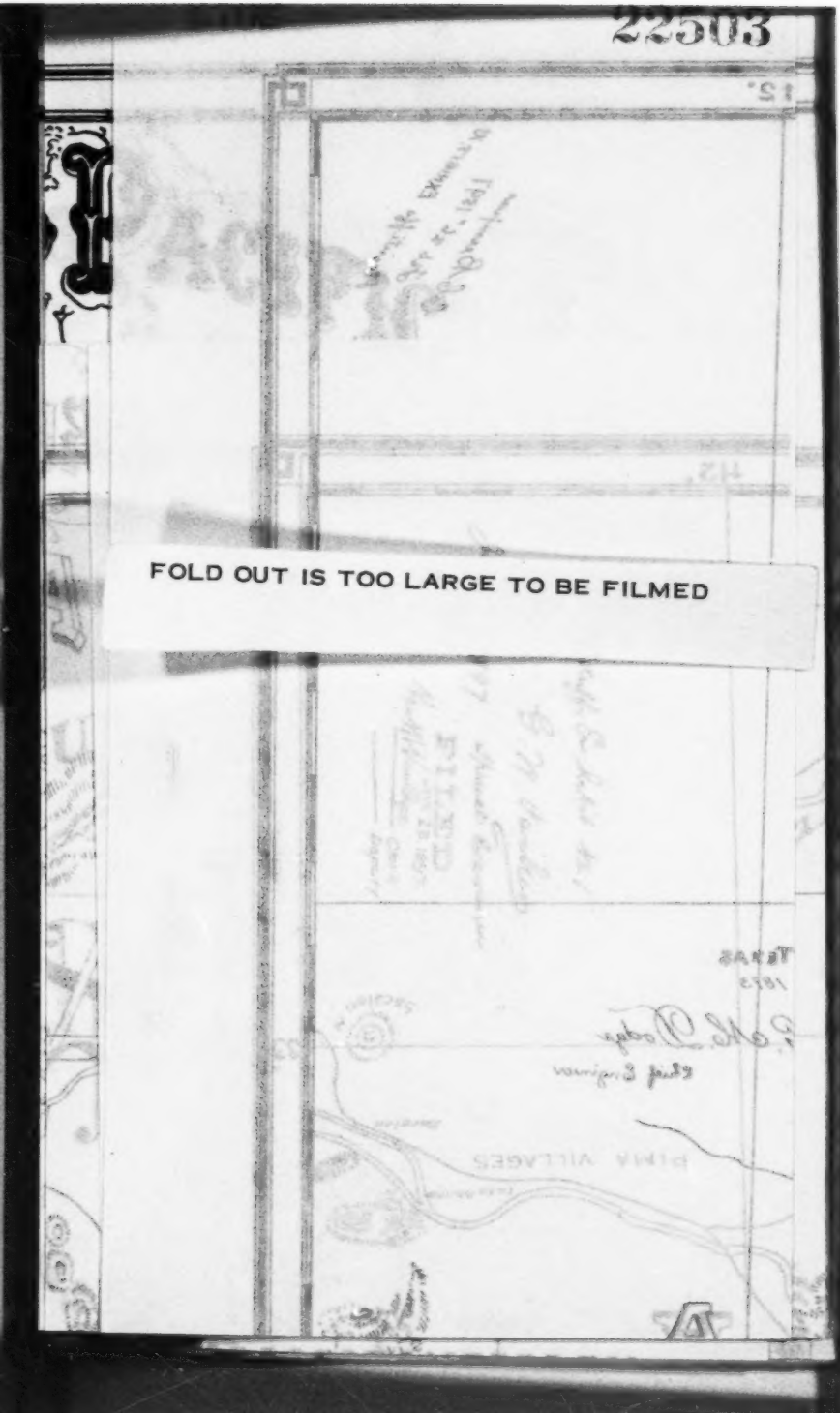

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WM.VAN DYKE Clerk.

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IN THE U.S. CIRCUIT COURT SOU

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THE SOUTHERN PACIFIC RAIL

NOS. 675 687 AND

C.C. BURNFAS

FEB 26" 1897.

PLFFF. EXHIBIT X 3

At a stated term, to wit, the January term, A. D. 1897, of the Circuit Court of the United States of America, of the Ninth Judicial Circuit, in and for the Southern District of California, held at the courtroom in the city of Los Angeles, on Tuesday, the first day of June, in the year of our Lord one thousand eight hundred and ninety-seven. Present: The Honorable ERSKINE M. ROSS, Circuit Judge.

THE UNITED STATES OF AMERICA, Complainants,

vs.

THE SOUTHERN PACIFIC RAILROAD COMPANY, D. O. MILLS and HOMER S. KING, Trustees, and THE CENTRAL TRUST COMPANY OF NEW YORK, THE SOUTHERN PACIFIC COMPANY OF KENTUCKY, THE COLORADO RIVER IRRIGATION COMPANY, Defendants.

Nos. 675, 587, 662, Consolidated

Report of Special Examiner.

Upon motion of Joseph H. Call, Esq., special assistant United States attorney, and good cause appearing therefor, and no objection being made by defendants, it is ordered that H. S. Rollins, Esq., of Los Angeles, California,

be, and he is hereby, appointed a special examiner and stenographer of this court to take testimony in said cause at Los Angeles, California, said testimony, when so taken, to be transmitted to this court in accordance with the rules of court.

I, Wm. M. Van Dyke, clerk of the Circuit Court of the United States, for the Southern District of California, do hereby certify the foregoing to be a full, true, and correct copy of an original order made and entered by said Court June 1st, 1897, in the cause entitled The United States of America, Complainants, vs. The Southern Pacific Railroad Company et al., Defendants, Nos. 675, 587, and 662, Consolidated, and remaining of record therein.

Attest my hand and the seal of said Circuit Court, this 7th day of June, A. D. 1897.

[Seal] WM. M. VAN DYKE,
Clerk.

Whereas, I, H. S. Rollins, was on the 1st day of June, A. D. 1897, appointed a special examiner and stenographer by the United States Circuit Court for the Southern District of California, to take the testimony at Los Angeles, California, in the case of The United States of America, Complainants, against The Southern Pacific Railroad Company, D. O. Mills and Homer S. King, Trustees, and The Central Trust Company of New York, the Southern Pacific Company of Kentucky, the Colorado River Irrigation Company, Defendants, Nos. 675, 587, and 662, Consolidated, as more fully appears from the foregoing and annexed order of said Court; and

Whereas, Joseph H. Call, Esq., special United States attorney in said cause, has requested that the testimony therein and to be taken before me, shall be taken down by a skillful stenographer or by a skillful typewriter, as may be determined by me, and has further requested that I, as such special examiner, should fix a reasonable time for the giving of notice to the counsel and solicitors for the defendants for taking such testimony;

Now, therefore, in pursuance of the foregoing order of said Court appointing me such special examiner and stenographer, and in pursuance of said application and request—

It is ordered that the testimony in said cause, to be taken before me as aforesaid, shall be taken orally and taken down by me as such stenographer, and that at least five days' notice of the time and place for taking such testimony shall be given by the counsel for the United States to the counsel and solicitors for said defendants, and that such notice may be given in accordance with the rules of the United States Circuit Court for the Southern District of California.

Witness my hand at the city of Los Angeles, California, this 7th day of June, A. D. 1897.

H. S. ROLLINS,
Special Examiner and Stenographer.

In the United States Circuit Court, for the Southern District of California, Ninth Circuit.

THE UNITED STATES,
Plaintiff,
vs.
THE SOUTHERN PACIFIC RAILROAD COMPANY, D. O. MILLS and HOMER S. KING, Trustees, THE CENTRAL TRUST COMPANY OF NEW YORK, THE SOUTHERN PACIFIC COMPANY OF KENTUCKY, and THE COLORADO RIVER IRRIGATION COMPANY,
Defendants.
Consolidated Nos. 587, 675, 662.

Notice to Take Testimony.

To the defendants in the above-entitled cause, and to Walter J. Trask, Lewis E. Payson, William Singer, Junior, William F. Herrin, W. H. H. Hart, Page, McCutcheon & Eells and Butler, Notman, Joline and Mynderse, attorneys and counsel for said defendants:

You will please take notice that on the 29th day of June, A. D. 1897, at the office of J. H. Call, room 309 Currier Block, 212 W. 3rd street, in the city of Los Angeles, State of California, at the hour of 10 o'clock in the fore-

noon, the United States will take the testimony of Charles J. Fox, O. N. Sanford, and others in the above-entitled cause, before H. S. Rollins, Esq., special examiner and stenographer thereunto appointed by the United States Circuit Court for the Southern District of California.

Said testimony will be taken orally, and in pursuance of an order of said special examiner will be taken down in shorthand.

The taking of said testimony will be continued from time to time and from place to place in said city of Los Angeles, as may be determined by said special examiner.

You are requested to appear and cross-examine said witnesses.

JOSEPH H. CALL,
Special United States Attorney.

State of California,
County of Los Angeles. } ss.

Bert E. Vickrey, being first duly sworn, deposes and says: That on the 22d day of June, 1897, he served the foregoing and annexed notice of taking of testimony upon the above-named defendants, and upon their respective solicitors and counsel as follows:

That he served said Walter J. Trask, as attorney for said defendants, by personally delivering to said Trask, at his office in the city of Los Angeles, California, a copy of the foregoing and annexed notice on the 22d day of June, 1897.

That each of said defendants in said cause is a nonresident of the Southern District of California.

That each of said solicitors and counsel for said defendants is a nonresident of the Southern District of California, except said Walter J. Trask.

That neither of said solicitors or counsel has designated any place where service may be made upon them, or either of them, in said city of Los Angeles, California, as required by the rules of this court.

That service was further made upon said parties defendant and their solicitors and attorneys by filing and depositing in the office of the clerk of the United States Circuit Court for the Southern District of California an original duplicate of said notice on the 22 day of June, 1897.

That service was further made upon said defendants upon said 22d day of June, A. D. 1897, by my mailing a true copy of said notice to William Singer, Jr., as solicitor and attorney for said defendants, addressed to him at San Francisco, California, where he resides, and deposited in the United States postoffice under cover of an official United States envelope.

BERT E. VICKREY.

Subscribed and sworn to before me this 22*st* day of June, A. D. 1897.

[Seal] GEORGE L. KEEFER,

Notary Public for Los Angeles County, State of California.

[Endorsed]: Consolidated Nos. 587, 675, 662. In the U. S. Circuit Court, So. District of Cal., Ninth Circuit. United States vs. So. Pacific Railroad Co. et al. Notice to take testimony. H. S. Rollins.

In the Circuit Court of the United States, Ninth Circuit, Southern District of California.

THE UNITED STATES,
Plaintiffs,
vs.
THE SOUTHERN PACIFIC RAILROAD COMPANY, D. O. MILLS and HOMER S. KING, Trustees, THE CENTRAL TRUST COMPANY OF NEW YORK, THE SOUTHERN PACIFIC COMPANY OF KENTUCKY, and THE COLORADO RIVER IRRIGATION COMPANY,
Defendants.

Nos. 675, 587, and 662. Consolidated.

Testimony.

Testimony by deposition taken at Los Angeles, California, on behalf of the United States in the above-entitled cause before H. S. Rollins, special examiner and stenographer.

Said deposition being taken in pursuance of the foregoing and annexed order of the United States Circuit Court, Ninth Circuit, Southern District of California, appointing the said H. S. Rollins such special examiner and stenographer, and in pursuance of the foregoing and annexed notice fixing the time and place for taking said

deposition, duly served upon the attorneys and counsel for the defendants, and in pursuance of the foregoing and annexed order fixing the length of time for making service upon the defendants of the taking of said deposition.

On this 29th day of June, A. D. 1897, at the office of Joseph H. Call, Esq., room 309 Currier Block, 212 W. Third St., in the city of Los Angeles, California, at the hour of 10 o'clock A. M., there appeared before me Joseph Call, Esq., on behalf of the United States, and H. V. Reardan, Esq., as attorney for the defendants in said cause, and thereupon the following proceedings were had:

By request of counsel for both sides, the examination of the witnesses hereinafter named was had orally and was taken down by me in shorthand, to be thereafter reduced to typewriting by me.

JOSEPH H. CALL, Esq., being by me first duly sworn and cautioned to testify the whole truth, testified as follows:

I want to state that in the latter part of February, 1897, at the city of Dallas, Texas, Major B. S. Wathen, chief engineer of the Texas & Pacific Railway Company, furnished me copies of three maps in his office. They were blue prints of the maps on file there, and the map which I have here and which I will offer in evidence was furnished to me at that time by Major Wathen, and is one of the same identical maps referred to by Maj. Wathen in his deposition lately taken at Dallas before G. A. Parker, Esq., special examiner, wherein he testified that this map was a true copy of the one on file in his office.

I now offer this map in evidence here, and ask that it be marked Plaintiffs' Exhibit "A" by the examiner.

No cross-examination.

(Signature of witness waived by consent.)

OLIVER N. SANFORD, being by be first duly and regularly sworn and cautioned to testify the whole truth, was examined, and in answer to the following interrogatories testified as follows:

Direct Examination.

(By JOSEPH H. CALL, Esq.)

Q. What is your name and age?

A. Oliver N. Sanford; forty-nine years old.

Q. Where do you reside? A. San Diego.

Q. How long have you lived there?

A. I have lived there since '72—that is, there and vicinity.

Q. What is your occupation? A. Civil engineer.

Q. How long have you been a civil engineer?

A. I was—call it from my actual work in the field, it would be from about 1870; but I was in the class of 1870 of the Massachusetts Institute of Technology of Boston.

Q. Were you ever employed by the Texas & Pacific Railway Company? A. I was.

Q. During what years?

A. The last part of '72 and early part of '73, I think; I was going to say up to about June or July—July, it must have been July.

Q. '73? A. Yes, sir; July, '73.

Q. State, if you know, what the Texas & Pacific Railway Company was doing in California at that time.

A. They were making surveys and maps for a road across the continent, a continental road.

Q. What were you engaged in doing for the company during the time of your employment?

A. I was engaged as general draughtsman, and took charge of their office work.

Q. With headquarters at San Diego?

A. Yes, sir.

Q. Did you make any maps for the company during that time? A. I did.

Q. State whether or not you made a map for the company in 1873 showing the line of route of the company from Fort Yuma on the Colorado river, thence northwesterly to the head of San Gorgonio Pass, thence southerly by way of the Potrero of San Jacinto, across the San Jacinto and Temecula plains to the Temecula canyon, and thence down that canyon to the coast; thence down the coast to Old Town, near San Diego, and thence to the bay of San Diego. A. I did.

Q. At what time, as near as you can remember, did you make that map?

A. Part of it was made very soon after I went into the office. There were several maps got out covering that ground during that time.

Q. Please examine Plaintiff's Exhibit "A," filed before Rollins this day, and state whether that map shows the line of route covered by you and shown upon the map made by you for the company in 1873?

A. (Witness examines map, Plaintiff's Exhibit "A.") It does.

Q. State the general description of the line of route as shown by this map.

A. Beginning at the river and going up there across the desert through San Gorgonio, and then we went down across San Jacinto and across Temecula plains down to Temecula, where it strikes the head of Temecula canyon, through Temecula canyon down to the coast, and along the coast to the Pueblo of San Diego, following down on the La Jolla route, and then still following the coast at La Jolla through to San Diego proper on the bay.

Q. From what date and information did you make that map for the company showing that line in '73?

A. From notes furnished by the engineers in the field.

Q. Who had charge of the surveying operations for the company during those years?

A. Major James A. Evans.

Q. Who were the local engineers in the work, so far as you remember?

A. J. U. Crawford; the Reno boys, I cannot tell their initials; and I think Mr. Fox had something to do with some of the lines also—C. J. Fox.

Q. State, if you know, what was the method of the company in surveying and laying out the lines of route?

A. The usual engineering method of staking at every hundred feet or oftener, if necessary, where angle points were made and curves were started and levels taken at these stations, which were the levels and notes for the

construction of the line as returned to the office, and from those the maps and profiles were made up.

Q. You also made profiles of this line?

A. Yes, sir.

Q. State, if you know, whether the Texas & Pacific Railway Company did any grading upon this line.

A. They did.

Q. During what period was that grading done?

A. It must have been during 1873. They may have commenced in '72, but it was '73 I think.

Q. Where was that grading done and how much was done? A. I think about ten miles.

Q. Commencing where?

A. Commencing at their grounds, known as the Texas & Pacific grounds on the bay of San Diego, and from there out through Old Town and up through to the commencement—or up towards Rose's canyon.

Q. In a northerly direction from San Diego?

A. Yes.

Q. They completed the grading for that distance?

A. Practically completed it; yes, sir.

Q. What did it cost, do you remember, for the grading?

A. I could not say. It was all quite easy work. I could not say what.

Cross-Examination.

(By Mr. REARDAN.)

Q. Mr. Sanford, did you plat all of the lines of route appearing upon the map that you have identified here?

A. I think so, but I would have to see the map.

Q. Is there any particular designation of all the lines of route, or anything to designate or identify one line from the other on this map?

A. There was at that time. The different lines were designated by letters; they were carried out by letters.

Q. The one which you have particularly identified was identified by what letter, do you recall?

A. I do not remember, but I think it was Line D.

Q. And these other lines were identified by letters also?

A. I expect so, because that is our usual method in the field, and I know it was carried out on these surveys.

Q. And did you also plat upon that map the line of route from San Diego to Yuma by way of Warner's Pass?

A. No, sir; I don't think there was any made. That is the Memphis and El Paso Road.

Q. This map shows one. When was that placed upon the map? A. I cannot say.

Q. Was that placed upon the map when you made it? A. No, sir; it was not.

Q. A line of route appears upon this same map from San Diego to Yuma, called the direct route, being lower down than the Warner's Pass. Did you plat that?

A. Yes, sir.

Q. What was that made from?

A. That was made from the notes of the Reno boys.

Q. In whose employ were they?

A. The Texas & Pacific.

Q. It was made up of the same character of data as

that you made the other lines of route from appearing upon this map? A. Yes, sir.

Q. How was that survey made?

A. The same method.

Q. Were you assisted in platting the line of route on that map from Yuma to San Gorgonio by information other than that furnished by the Texas & Pacific surveyors? A. Not that I know of.

Q. Had you, prior to making that map, seen any other map of the line of route following the same general lines from San Gorgonio Pass to Yuma?

A. Of course I had seen the Southern Pacific.

Q. You had seen, prior to the making of that map, a Southern Pacific map covering the same line of route?

A. Yes, sir.

Q. Did your line of route follow the same line of route as that? A. I never compared it. I think so.

Q. It goes through the same pass and has the same general direction or way?

A. It has. Technically, I cannot say.

Q. Are you acquainted with the line of route now used by the Southern Pacific Company from San Gorgonio to Yuma?

A. I have seen the maps but I have never compared them with this.

Q. Does the line as constructed and operated by the Southern Pacific follow the lines upon the maps or plats that you saw prior to making your map?

A. Generally speaking, yes, sir.

Q. Does the line of route as now constructed and used follow the line of route platted upon your map?

A. I suppose, generally speaking, it does.

Q. Who furnished you the plat or map of the Southern Pacific road prior to the making of this map by you?

A. I saw it in the office.

Q. Where? A. In San Francisco.

Q. Did you examine it with reference to making your map? A. No, sir.

Q. Did you use it, or any knowledge derived from it, in platting your map?

A. Not that I remember of. I remember of no knowledge coming from that source.

Q. You simply had the data furnished by the field engineers? A. Yes, sir.

Q. Mr. Sanford, will you state about where the road which you say was constructed or graded—what point it extended from in San Diego?

A. From the company's grounds on the bay up to the head of False bay, up to the commencement of Rose's canyon.

Q. The line of route which you have described in your direct examination from San Gorgonio Pass to Temecula is what is known as the direct route? A. Well, yes.

(Signature of witness waived by consent.)

O. N. SANFORD.

SAMUEL G. BENNETT, being first duly and regularly sworn and cautioned to testify the whole truth, was examined, and in answer to the following interrogatories testified as follows:

Direct Examination.

(By JOSEPH H. CALL, Esq.)

Q. What is your name and age?

A. Samuel G. Bennett. I am thirty-five years old.

Q. You reside in Los Angeles? A. Yes, sir.

Q. What is your occupation?

A. Surveyor and draughtsman.

Q. State whether or not you have made a plat showing the route of the Texas & Pacific Railway Company from Fort Yuma northwesterly to the San Gorgonio Pass, thence down the Potrero of the San Jacinto to Temecula canyon on the line to San Diego, showing said line of route in connection with the public surveys, and showing the 20, 30 and 40 mile limits, and also showing the definite location of the Southern Pacific Railroad from Fort Yuma northwesterly through San Gorgonio Pass, upon the same plat?

A. I have made such a map.

Q. Will you please produce it before the commissioner?

(Witness produces map.)

Q. We will offer this map in evidence as Plaintiff's Exhibit "B" herein. State from what data you prepared this plat or map?

A. Well, the line of the Texas & Pacific is made from the annual report to the Government and description of the line of route in '74.

Q. You mean the President's annual report to the Government?

A. Yes, sir. And the Southern Pacific's line of definite location was taken from Defendant's Exhibits numbers 62 and 63, case 184, United States vs. S. P. R. R., in the United States Circuit Court, Ninth Circuit, Southern District of California.

Q. Showing the located and constructed Southern Pacific Railroad?

A. Yes, sir; the Southern Pacific Railroad definite location, and the 20 and 30 mile limit as compiled from Defendant's Exhibits Numbers 320, 321 and 323 in case No. 600, United States vs. Southern Pacific Company. Township lines and topography taken from township plats on file in the United States Landoffice, Los Angeles District.

Q. Did you also use in making that map the map showing the San Gorgonio line of the Texas & Pacific Railroad, which I will briefly describe as the map of the company on file in the Federal Court?

A. Yes, sir; that is Plaintiff's Exhibit No. 1 before G. W. Parker, Special Examiner.

Q. And did you also use the blue print copy of the map which has just been marked Plaintiff's Exhibit "A" before Rollins; this map which is now before you?

A. This seems to be the identical map. That is the identical map that I used; it has the same markings.

Q. Now, state whether the line of the Texas Pacific Railway Company shown upon the blue print map, Plaintiff's Exhibit 1 before Parker, and described in the annual report of the Texas & Pacific Railway Company to the Government in '74, is correctly shown upon the plat

which you have made, in connection with the Government surveys?

A. To the best of my knowledge and belief it is an exact reproduction upon a larger scale.

Q. Upon what scale is that plat made?

A. This is two miles to the inch.

Q. State whether the line of definite location of the Southern Pacific Railroad Company shown upon your map is correctly reproduced from the plats of the company on file in the United States Circuit Court in the cases you have referred to?

A. It is correct, to the best of my knowledge and belief.

Q. And state whether the 20, 30 and 40 mile limits on the line of route as shown upon this map are correctly reproduced from the plats you have referred to?

A. They are correctly reproduced.

Q. I offer this plat in evidence to be marked Plaintiff's Exhibit "B" before Rollins.

Q. You do not show all of the Texas & Pacific Railroad between Fort Yuma and San Diego upon this plat?

A. No, sir.

Q. You only show it through the intersecting limits of the Southern Pacific?

A. I did not show all of the lines as shown on Plaintiff's Exhibit "A"; only the portion from Fort Yuma to the head of Temecula canyon.

Cross-Examination.

(By Mr. REARDAN.)

Q. At whose request was that map made, and when was it made?

A. It was at the request of Mr. Call, at various times as the data has accumulated. I cannot state the times that it was made. Within the last year.

Q. During the last how many months?

A. I should say during the last fifteen months; there was no work done prior to that time.

Q. Was it from data directed to be taken by you?

A. It was made under his instructions.

Q. And from plats and maps suggested to you by him? A. Yes.

(Signature waived by consent.)

I hereby certify that the foregoing testimony, consisting of eleven (11) pages, of the witnesses therein named, was taken down by me in shorthand at the time and place specified, and was thereafter reduced to typewriting by me, and, except where the signature of the witness was waived by consent, the same was read over by said witnesses and corrected by them respectively where necessary, and thereupon said witnesses each subscribed his name thereto as hereinbefore appears, and the same was then sworn to by them respectively before me.

Witness my hand at the city of Los Angeles, this 20th day of July, A. D. 1897. H. S. ROLLINS,

Special Examiner and Stenographer.

[Endorsed]: No. 675. Consolidated. U. S. Circuit Court, Ninth Circuit, Southern District of California. The United States of America vs. The Southern Pacific R. R. Co. et al. Certified copy, order and order directing notice, notice, affidavits, and testimony. Filed Jul. 20, 1897. Wm. M. Van Dyke, Clerk.

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FOLD OUT IS TOO LARGE TO BE FILMED

2098

In the United States Circuit Court, for the Southern District of California, Ninth Circuit.

THE UNITED STATES, Plaintiffs, vs. THE SOUTHERN PACIFIC RAILROAD COMPANY, D. O. MILLS AND HOMER S. KING, Trustees, THE CENTRAL TRUST COMPANY OF NEW YORK, THE SOUTHERN PACIFIC COMPANY OF KENTUCKY, and THE COLORADO RIVER IRRIGATION COMPANY. Defendants.	Consolidated Nos. 675, 587, and 662.

Testimony.

Testimony taken before the undersigned, Clarence L. Trevit at Rooms 1 and 2, No. 505 E street, N. W., in the city of Washington, District of Columbia, on the 30th day of September, A. D. 1897.

In pursuance of the annexed order of this Court, appointing the undersigned special examiner and stenographer therein, fixing the time of notice to be given the defendants, and in pursuance of the annexed notice, duly served on the defendants and their counsel, and it appearing that reasonable and proper notice has been given

to the defendants, the following proceedings were had, at said time and place, there appearing Mr. Joseph H. Call, special assistant U. S. attorney, for the United States, and Mr. E. L. Payson, as counsel and attorney for the defendants.

By direction and consent of all parties, the testimony was taken in shorthand by the undersigned and thereafter to be reduced to typewriting.

And it was further agreed that all formalities as to the taking of said testimony were waived.

It was further stipulated that all parties save and reserve all objections to the testimony as to its competency, relevancy, and materiality.

Thereupon Mr. JOSEPH U. CRAWFORD, being produced as a witness on behalf of the United States, was duly sworn, cautioned, and examined as follows:

Mr. CALL.—Q. State your name.

A. Joseph U. Crawford.

Q. Where is your residence?

A. Fox Chase, Philadelphia.

Q. What is your present official connection with the Pennsylvania Railroad, if any?

A. Engineer of the branch lines.

Q. What do your duties consist of in a general way?

A. Well, new surveys, estimations, and construction of new lines.

Q. And building bridges? A. Yes, sir.

Q. How long have you been in that position?

A. I have been with the Pennsylvania Railroad Company, off and on, since, 1871.

Q. You constructed, under your direction, several large bridges on that railroad, have you not, within the last few years?

A. Yes, sir; a number of bridges and viaducts.

Q. What business were you engaged in, in 1872, 1873, and '74?

A. Well, in the summer of '72, in July, I was here as resident engineer for the A. & T. and the P. & B. R. R.

Q. What year?

A. In the summer of '72; I resigned there and then Colonel Scott sent me to California.

Q. What railroad did Colonel Scott represent and in what capacity?

A. He was president of the Texas & Pacific Railroad Company.

Q. You mean Colonel Thomas A. Scott?

A. Yes, sir.

Q. You did considerable work for the Texas & Pacific Railroad Company, did you not?

A. I think I worked under General Dodge for the California & Texas Railway Construction Company.

Q. Acting for the Texas & Pacific Railroad?

A. I was sent out by the Texas and Pacific Ra ad Company and reported to General Dodge, for the California & Texas Railway Construction Company.

Q. Did you make any surveys in the field under directions from Colonel Scott? A. No, sir; I did not.

Q. What did you do in California?

A. I explored the line leading to and from San Gorgonio summit, as far as Fort Yuma east and San Diego south.

Q. Did you survey the lines from Fort Yuma, between Fort Yuma and the summit of San Gorgonio Pass, and from that summit down the branch of the San Jacinto, across the Temecula plains to the canyon of that name, and thence down the coast to the bay of San Diego?

A. I did.

Q. About what period did you make that survey?

A. During the autumn of 1872.

Q. How many were with you in your surveying party?

A. It was a large party; I think twelve (12) or fourteen (14). I have forgotten.

Q. Did you generally follow the depressions of those points that I have named in making that survey?

A. We sustained ourselves where our grades required it; of course we did not drop immediately into the canyon; we ran such a line as we could construct upon.

Q. How was that survey made—what was the character of it?

A. Well it was chained and staked in order to obtain the topography and in order to construct a profile and make a close estimate.

Q. Did you make reports to the company of the survey, showing the topography, with a profile and map?

A. Yes, sir; I was in the office at San Diego, for quite a while, working on the maps and reports under Major Evans, engineer of that division—California division.

Q. You were in charge of that surveying party under

Major Evans, who was engineer in charge of the surveys for California? A. Yes, sir.

Q. How often were stakes driven, on that line of survey?

A. Well, as often as was necessary; my recollection of it was, we drove stakes every 200 feet on the desert, but whenever we were on the grade we drove them oftener—100 feet.

Q. Can you state when you made a report of the survey of this line to Major Evans or General Dodge?

A. I made a report to Evans, I think in the spring of 1873, after I returned from Fort Yuma.

Q. And do you know whether he reported to General Dodge?

A. Oh, yes; he reported to General Dodge quite fully.

Q. Did I understand you to say that you made a map and profile showing this line?

A. We made a number of maps of different scales, and did all the necessary office work in order to get up a proper and reliable estimate.

Q. And those maps were turned over to the chief engineer?

A. Major Evans had them in charge; I was in his office subject to his orders, and consulted with him when he sent for me. Major Evans and I were brothers-in-law; I married his wife's sister.

Q. There were other surveying parties operating under General Dodge in California to explore a route between the Colorado river and the San Gorgonio Pass at that time, or about that time, were there not?

A. Yes, sir; about that time; one in charge of a man by the name of Reno, which was on the direct line or line running northerly along the border, the southern boundary of the United States.

Q. What was the topography of the country from San Gorgonio Pass southerly to the Mexican boundary, as to being mountainous?

A. It is very rugged. Two of the highest peaks in the range are to the north and south of San Gorgonio Pass.

Q. And the mountain range extends southerly to the Mexican boundary? A. Yes, sir.

Q. And it is a mountainous country?

A. Yes, sir; it is rugged and abrupt.

Q. State how long the Texas and Pacific Company or General Dodge, as chief engineer, was engaged in exploring that mountain range for the purpose of securing a practicable and eligible route between Fort Yuma and the Pacific.

A. I think it began in the summer of '72, and continued his examinations through the winter of '72 and '73 and on into '74.

Q. Who was that?

A. Major Evans; he had three parties; my party, Reno's party, and a man by the name of Wood had a party in the field for a while, on the route of Julian. There were three summits examined—San Gorgonio summit, an intermediate Warner's Ranch summit, and a summit near the Mexican boundary, with the necessary approaches.

Q. These were the lowest passes?

A. Yes, sir; the lowest approachable passes; I call them summits.

Q. The company caused surveys to be made of the line of road through each of these passes or summits?

A. Yes, sir; one under Reno, one under Wood, and one under myself.

Q. Can you give the elevations of those passes?

A. My recollection is that the summit on the direct line, near the southern boundary of the United States, was in the vicinity of 4,000 feet, and the San Gorgonio Pass was between 26 and 27 hundred feet. I have forgotten the Julian or Warner's Ranch summit—the middle summit.

Q. Was it higher or lower?

A. I think it was lower than the summit on the Mexican border and higher than the San Gorgonio summit.

Q. State now, if you know, whether these different surveying parties reported the result of their surveys to Major Evans, with maps and profiles, in order that the company might determine the most practicable and eligible route?

A. Undoubtedly the engineers all reported to Major Evans; he was an active man and a very exact man in making calculations. I never have met in all my experience a man who went as deeply into a question as James A. Evans, before or since—that is, in equating the rise and fall and curvature and general characteristics of one line as against another.

Q. Major Evans reported to General Dodge, did he?

A. Yes, sir; Major Evans was chief of construction

for General Dodge on the Union Pacific, and was close to the general, and the general had a great deal of confidence in him.

Q. In your view, then, the report of Major Evans would be accurate and substantially correct?

A. According to the data he had on hand.

Q. In the location and construction of railroads there is a basis, is there not, or table upon which engineers determine what a given elevation or grade will amount to in distance over a level road, so that while a line of railroad may be longer on the earth's surface, in an engineering point of view it may be shorter?

A. If you mean a standard generally adopted by engineers in order to determine the value of the rise and fall and curvatures, I do not know of any.

Q. I was not referring to curvature, but the elevations, as compared with distance.

A. No general rule can be applied to any railroad; the movement and traffic varies in different directions. I have tried to have our offices adopt some such method in equating one line as against another, and give us certain instructions, so we could absolutely state which was the best line, but it has always been heretofore done by the inspection of profiles and maps, without reducing it to a fixed value. The great writer on this subject is Wellington; some people agree with him, and some differ with him, but he has spent an immense amount of time and experience in trying to establish the data you speak of and formulate a rule for all cases; there are being some experiments made with resistance on curves, so as

to equate curvature resistance as between straight lines. Generally, different companies have different ways; it depends a great deal upon their speed and traffic, but upon the whole question you might say "Doctors differ." and it is the same with railroads.

Q. Have you examined the report of Major James A. Evans, to the company—to General Dodge, chief engineer, dated February 3, 1873, upon the comparison and availability of the different routes through the mountains, between Fort Yuma and bay of San Diego?

A. I was familiar with it at the time it was written, but I have not examined it since, except so far as my report went, which was incorporated.

Q. From your knowledge of the topography and grades, would you say that the report is substantially correct?

A. I don't think they had developed a practicable line on what we call a direct line from San Diego to Fort Yuma, along the southern boundary.

Q. At that time, you mean?

A. At that time or even since.

Q. Well, what do you say as to the estimates of Major Evans in that report, as to measuring grades or altitudes against distances?

A. I think that Major Evans' report, wherein he advised the adoption of the line by San Gorgonio Pass as being commercially the shorter line and best for the company, was correct.

Q. Were you acquainted with General Dodge?

A. Very well.

Q. You knew him in 1872-'73?

A. No; I didn't know him in '73, but I knew him subsequently.

Q. In '74?

A. No, I had never seen General Dodge until in 1876, in Washington. I saw General Dodge first in Washington in '76 and '77, when he was applying for aid here. He was with Col. Scott; that was the first, and I think it was in '76 and '77.

Cross-Examination.

(By Mr. PAYSON.)

Q. You say you saw General Dodge in Washington in 1876 and 1877? A. Yes, sir.

Q. At all events, the time when they were applying for congressional aid—what particular aid was the Texas & Pacific seeking, from Congress at that time, if you remember?

A. To construct the railroad upon the 32d parallel.

Q. And was it not also to secure aid from the Government to the extent that the Government guarantee the bonds issued by the Texas & Pacific Railroad?

A. Yes, sir; as I remember.

Q. In attempting to secure that congressional aid, were you not, in company with Mr. John C. Brown, then vice-president of the Texas & Pacific Railroad Company, and Mr. Frank Bond, who was also an official of the Texas & Pacific Railroad Company?

A. He was vice-president.

Q. Were you not aiding in doing what you could in securing that same aid?

A. In the winter of '77 and '78, I represented—I was one of the committee of two that represented the city of San Diego before the committee of the Pacific Railroads.

Q. Did you, while appearing before the committee on Pacific Railroads, file with them a printed argument in support of the view they took, a copy of which I hold in my hand? A. I did.

Q. And did you in that argument, as appears on page 21, use this language: "The California division of the Texas and Pacific Railway leaves Yuma for a divergent line from the Southern Pacific of California, and is laid in a direct westerly course as far as the eastern base of the Sierras; thence with fair mountain alignment and easy gradient, not to exceed 105 feet per mile, to Ship's Channel, in the bay of San Diego, a distance of 193 miles by rail from the great mining territory of Arizona to tide water, instead of the 720 miles all rail line with which the Southern Pacific of California seek to divert trade from its natural course and carry it per force to the city of San Francisco. This division of the Texas and Pacific Railway can be constructed for one-tenth of the reported cost of the Southern Pacific Railroad of California, as filed with the secretary of the interior. It will have 527 less miles of mountain railroad; it will be a far more favorable line to operate and maintain; its motive power will have a superior efficiency and capacity on account of its reduced grades and curvatures, and the dry rail and favorable roadbed which the climatic and geological formation of the country traversed insures."

A. I did.

Q. I will ask you to look at the copy of Plaintiff's Exhibit No. 21, filed in this case before Longley, special examiner, purporting to be a copy of the portion of the line—the map of the Texas & Pacific Railroad, and its connections. State to this examiner whether the line of road as shown upon this map, marked with a blue line, from Fort Yuma to San Diego, is in substance the line described in this pamphlet of yours on page 21, to which your attention has been called.

A. It is.

Q. What, if anything, or work did you do as a civil engineer under the direction of Mr. Bond, the vice-president of the Texas and Pacific Railroad Company about the year 1877, with reference to the direct line from Fort Yuma to San Diego; state in detail?

A. I was surveying up in the Black Hills, when I got a telegram from Mr. Bond, asking me to go to San Diego and try to reduce the quantities upon the direct line surveyed by Reno. I went there and reconnoitered the ground, organized a surveying party, and was in the field for two or three months—as long as they would pay anything, and as a result I reported a very heavy reduction upon Reno's quantities upon the western slope of the Sierras upon the direct line. Frank Bond then communicated with General Dodge, and General Dodge sent Evans back to California to see me, and to see wherein this reduction could have been made, and whether he would acknowledge that I had improved upon the Reno survey, and I understood—I have not seen Evans' report to Bond and General Dodge—but I understand

he acknowledged that I made a heavy reduction. On the strength of that the people of San Diego appointed me, with David Felsenheld, as a committee, and I went to Washington in the winter of '77 and '78, and appeared before the committee on the Pacific Railroad and did all I could to get the direct line constructed. At that time, if my memory serves me, the Southern Pacific had constructed through San Gorgonio Pass.

Q. (By Mr. CALL.) To Fort Yuma?

A. No; for I went to Fort Yuma in 1877, where I located a crossing for the Texas & Pacific, in order to hold our rights at that crossing and not be interferred with. As money was pretty short in those days, it was some time before I could get any; then I came here and put in a season, and the following season Colonel Scott sent me to Japan.

Q. Then the expression that you used in your pamphlet on page 21 is the result of this work you did in '77 for the vice-president of the Texas and Pacific Railroad?

A. It is the result of my feelings, that having improved the line in one patch and saved over a million dollars, that I could also improve the eastern slope and probably get a good operating railroad within the limits of the Texas & Pacific Railroad on a direct line, but it would not be a direct line as shown on the map because it would be a sort of tortuous line, generally keeping north of the Mexican boundary. We developed north from the summit in order to stay in our own territory.

Q. Is that the route known among engineers as the Carriso canyon route?

A. I will answer that by stating that Carriso canyon occurs upon the eastern slope of the Sierras, and is most formidable to surmount.

Q. Is the Carriso route as distinguished as the San Gorgonio?

A. Yes, sir. We would have tried to avoid this crossing as the distance across this latter route is 193 miles; that is about what I figure it.

Q. About how much of that distance would be east of the crest of the Sierras? A. I couldn't tell you.

Q. About how much?

A. I suppose 125 or 130 miles.

Q. East of what?

A. East of the crest of the Sierra Nevadas.

Q. From Fort Yuma to the Sierra Nevadas?

A. It would not be over 60 or 70 miles from Fort Yuma to the foot of the slope.

Q. Now, the general character of the county from Fort Yuma to the foot of the Sierras is substantially the same, is it not, as the character of the county northwest from Fort Yuma, is it not?

A. It is all desert, but there is more shifting sand on the direct line than there is on the San Gorgonio line that passes north of the sandhills; on the direct line we encountered the sandhills.

Q. (By Mr. CALL.) What is the difference between the two as to being subject to overflow?

A. Well, they are both subject to overflow; the Southern Pacific had to change their line once on account of

overflow; they got below tide, but I think the San Gorgonio route got much lower.

Q. In a general way, about how long were you gentlemen around the capitol here before the committee on Pacific Railroad with reference to this matter of the subsidy, during the session of Congress in 1877 and '78?

A. Practically the whole session; I think I boarded here four or five months.

Q. Mr. John C. Brown at that time was vice-president of the Texas & Pacific Railroad? A. He was.

Q. Do you remember, without being able to identify anything, of the fact of these gentlemen making speeches and having maps, etc., with reference to what the Texas & Pacific was claiming, and what it was going to do in order to get this subsidy?

A. I remember the fact that Governor Brown went before the committee on Pacific railroads, but I cannot remember the fact of what he produced or what happened.

Q. Assuming he was before the committee on the Texas & Pacific Railroads, February 22, 1876, and used in substance this language:

"Mr. Chairman and Gentlemen of the Committee:

"Before proceeding regularly with my argument, I wish at the outset, to say that I have not indulged in personalities, and will not do so. I wish to state, in reply to Mr. Huntington, when he says that Colonel Scott, two years ago, declared that the road could not be constructed over the direct route from Yuma to San Diego, that we have since that time had skillful and intelligent

engineers to go over that country, and they have explored canyons and passes not before examined by our engineers and revised the former line; and they report that the direct line is entirely practicable, and that it can be built at much less cost than similar work done on the Southern Pacific or Central Pacific roads. We have a profile of the route, and the report of the engineer, and know certainly that we can build from Fort Yuma through to San Diego at a cost of less than $36,000 a mile, on the average. There are thirty miles of this route which will be very expensive; some of it may cost $250,000 to $300,000 per mile; but the average will not exceed $36,000 per mile. While not professing to be a skilled engineer, as Mr. Huntington does, I still claim to have some knowledge and practical experience in such matters, and went last summer, with an engineer, over the ground and spent some time in the mountains.

"Mr. HUNTINGTON.—I don't brag on being an engineer; but I have practical common sense.

"Mr. BROWN.—From the facility with which you speak of it, I had supposed you claimed to be an engineer. I myself went carefully over some of the roughest portions of the country; and I have not the shadow of a doubt, but the direct route from Yuma to San Diego, through one of two passes—Carriso canyon, or Warner's Pass—is altogether practicable; and there can be no question but our estimates can be met in accordance with the figures stated."

I will ask you, Colonel Crawford, who the engineers were that he referred to in that speech, if there were any

others besides yourself in the work done over the Reno survey; was there any besides yourself?

A. I don't remember who Col. Evans brought with him. Evans was out there himself in '77, but I have forgotten who were with him, he probably refers to myself and Major Evans.

Q. And when he speaks of revising the former line does he mean the Reno line?

A. It must be the Reno line, but he qualifies that by giving himself latitude, and taking in Warner's Pass—that was north of Carriso canyon—and I think probably giving better results than the direct line.

Q. How far was Warner's Pass?

A. I could not tell exactly; I think 40 or 50 miles.

Q. Looking at this map, appended to these remarks of Mr. Bond entitled "Maps of New Routes," is not the line constructed upon it from Fort Yuma to San Diego identically the same as the line shown in Exhibit 27, now lying upon your knee, between the same point?

A. It is.

Redirect Examination.

(By Mr. CALL.)

Q. That argument before the senate committee was made in 1878? A. Yes, sir.

Q. You say that in 1878 the Southern Pacific Railroad Company had occupied the San Gorgonio Pass?

A. In 1877.

Q. They occupied it in 1877?

A. Yes, sir; I think so.

Q. And it was for that reason that the Texas Pacific Railroad Company were seeking to find a more direct route from Fort Yuma to San Diego?

A. I could not speak for the Texas Pacific Railroad. I was representing San Diego, and they were exceedingly anxious. They thought they were to be left out in the cold by Huntington going through the San Gorgonio Pass, and they wanted a direct line. They thought they would be cut off, and we were there representing them. You notice the report of the committee states that San Diego had more merits in its argument than anywhere else. You will find we made a strong fight to connect San Diego by the direct line. It was a fight for aid and a fight for life for San Diego. I was not in the employ of the Texas and Pacific Railroad. I was elected with David Felsenhelt, to represent San Diego before the committee on the Pacific Railroads, and to what extent we interceded was shown by the evidence.

Q. It is stated in the report of Major Evans and General Dodge that the estimated cost of the direct line was something over twelve million dollars, and the San Gorgonio route something over six millions.

A. Yes, sir.

Q. And you say you reduced the grade on the western slope, and saved something like a million dollars?

A. I reduced the amount of tunnel work. It was not a feasible line—the first line. It hung on the tops of the mountain and had a number of tunnels, and slopes running about two or three thousand feet down. The United States treasury would not have built it—I do not be-

lieve they could build it for that, and consequently I made a development, and got good fast ground and had a profile made, which was practicable, but they gave me no money.

Q. You did not work on the eastern slope?

A. No, none whatever except to reconnoiter.

Q. Can you say from your knowledge of the topography of the county whether the cost could have been reduced on the eastern slope?

A. It is my opinion it could have been reduced.

Q. Can you state how much the total cost could have been reduced?

A. I could not say—I would have tried to keep out of Carriso canyon, if I could.

Q. Which route then would have been the most practicable and eligible—the Carriso route or the San Gorgonio route?

A. It was a matter of getting into San Diego harbor and saving distance, and the arguments were advanced in that way. I think if we would have decided upon a direct route, we would have taken Carriso canyon and Warner's Pass routes, and we would have made a very careful topographical map and tried every possible development that would sustain us. It was a great big question. Probably nothing in the country ever equaled it.

Q. From the surveys that were made even before or after the adoption of the San Gorgonio route, was a more practicable or eligible route found, considering the distances and cost, grade, etc., than the San Gorgonio route?

A. There was no through connecting route found. It was a patched route—a supposititious route on the direct line. It was not so extensively staked as the San Gorgonio route was. We altered it in some places.

Q. What you were looking for, then, was a possible route without a comparison of cost as against the San Gorgonio route?

A. Yes, sir; we were looking for a possible route—within the limits of the Pacific Railroad bill.

Q. Ignoring the San Gorgonio route—that being occupied by the Southern Pacific.

A. Yes; I did not connect my action then with any corporate action of the Texas Pacific, for I knew nothing about it. I simply worked there for a couple of months, and then they dropped me. They would not let me go on. It was a great big subject, and they were hardly prepared to do it justice. It was, you might say, a fight for life of the people of San Diego.

Q. The San Gorgonio Pass route runs through an open pass? A. Yes, sir.

Q. Without any tunneling?

A. Yes, sir; there were no tunnels.

Q. But the other routes to the south, they had tunnels? A. Yes, sir; they had tunnels.

Q. Were there tunnels and fills and heavy grades?

A. Yes, sir; the approaches to the tunnels were on the maximum grades, and are developed on the hillside.

Q. The disadvantages of the southen routes, then, as against the San Gorgonio route, was not only in grades, but in the sliding mountains, was it not?

A. Well, it was a most formidable proposition—the direct line.

Q. The direct line contemplated a great many extensive bridges, did it not?

A. Yes, sir, and some high viaducts.

Q. And long tunnels? A. Yes, sir.

Q. And upon reaching the desert upon the eastern slope of the Sierras, you encountered shifting sands?

A. Yes, sir.

Q. The obstacle of sand shifting by the desert winds was more serious on the southern route than on the northern route, was it not?

A. I should think so. We passed north of the sand-hills on the San Gorgonio route, and there we found a pretty good hard roadbed, but they had trouble on the north route too.

Q. It was then a most difficult matter to select a route between the Colorado river and San Diego, and great difficulties were encountered? A. Yes, sir.

(It is further stipulated that the foregoing deposition, after being transcribed into typewriting, may be read over by the witness and signed by him, and that further verification of the same is hereby waived.)

JOS. U. CRAWFORD.

I further certify that said testimony of said witness was taken down by me in shorthand and reduced to typewriting, and was then read over by said witness and corrected by him, and thereupon the said witness subscribed his name thereto.

Witness my hand, city of Washington, District of Columbia, this the 11th day of October, A. D. 1897.

CLARENCE L. TREVITT,
Special Examiner.

In the United States Circuit Court, Southern District of California, Ninth Circuit.

THE UNITED STATES,
Plaintiff,

vs.

THE SOUTHERN PACIFIC RAILROAD COMPANY, D. O. MILLS and HOMER S. KING, Trustees, THE CENTRAL TRUST COMPANY OF NEW YORK, THE SOUTHERN PACIFIC COMPANY OF KENTUCKY, and THE COLORADO RIVER IRRIGATION COMPANY,
Defendants.

Consolidated Numbers 675, 587, and 662.

Testimony taken before the undersigned, Clarence L. Trevitt, at the interior department, in the city of Washington, District of Columbia, on the 5th day of November, A. D. 1897.

In pursuance of the annexed order of this court, appointing the undersigned special examiner and stenographer therein, and in pursuance of agreement by and between counsel for the United States and counsel for the defendants, the following proceedings were had; at

said time and place there appearing Mr. Joseph H. Call, special assistant United States attorney, for the United States, and Mr. E. L. Payson, as counsel and attorney for the defendants.

By direction and consent of all parties, the testimony of Samuel S. Marr and Arthur Martin was taken in shorthand by the undersigned, and thereafter to be reduced to typewriting.

And it was further agreed that all formalities as to the taking of said testimony were waived.

It was further stipulated that all parties save and reserve all objections to the testimony as to its competency, relevancy, and materiality.

Thereupon Mr. SAMUEL S. MARR, being first duly sworn, cautioned, and examined to testify to the truth, the whole truth, and nothing but the truth, testifies as follows:

Q. State your name and age.

A. Samuel S. Marr; age, 52 years.

Q. What is your present occupation, and how long have you been so engaged?

A. I am a clerk in the general landoffice, railroad division, and have been there since May, 1877.

Q. Are you familiar with the course of procedure and practice in the department of the interior, by reason of this employment, in all matters connected with the administration of the acts of Congress making land grants to railroads?

A. Yes, sir; I am thoroughly familiar with the practice.

Q. Have you at hand the forms of certificates which are required by the department of the interior, to be used upon maps of definite location, on line of land grants of railroads, since 1867, up to that date?

A. Yes, sir. I present the commissioner with form No. 1 and form No. 2 of the certificates which have thus been required. These are taken from the formula of approved circular of the general landoffice, approved by the secretary of the interior, and they may be marked Exhibits "A" and "B," to my deposition.

Q. You may state what, if any, map of the line of the Texas and Pacific Railway Company, in California, is on file in the general landoffice.

A. A map filed in this office, September 2, 1871, shows the line of the general route of the Texas & Pacific Railroad in California, and that is the only map on file in this office, showing the line in California.

SAMUEL S. MARR.

It was further stipulated that the foregoing deposition, being transcribed into typewriting, may be read over by the witness and signed by him, and that further verification of the same is hereby waived.

CLARENCE L. TREVITT,
Special Examiner.

ARTHUR MARTIN, being first duly sworn, cautioned, and examined to testify to the truth, the whole truth, and nothing but the truth, testifies as follows:

(By Judge PAYSON.)—Q. State your name, age, and present occupation?

A. Arthur Martin; age 53 years; am clerk in the office of the secretary of the interior, division of lands and railroads.

Q. How long have you been in this office?

A. I have been here since 1879.

Q. Are you familiar with the records of this office relating to the Texas & Pacific Railroad Company?

A. Yes, sir.

Q. Are you familiar with the annual reports of the president of the Texas & Pacific Railroad Company, made to the stockholders of that company for the years 1873 to 1877, inclusive? A. Yes, sir.

Q. What action has been taken by the department of the interior as to these several annual reports, except as to acknowledging their receipt and placing them on file?

A. It does not appear by the records that any other action was taken.

Q. You may look at Exhibits "A" and "B," now shown you, and state whether these exhibits show all that was done, so far as appears of record, as to the reports which are referred to in them.

A. Yes, sir; they do.

Judge PAYSON.—I now offer Exhibits "A" and "B," referred to by the witness, to be attached to his deposition, and the same are marked "Martin's Exhibits A and B."

It was further stipulated that the foregoing deposition, after being transcribed into typewritng, may be read over by the witness, and signed by him, and that further verification of the same is hereby waived.

ARTHUR MARTIN.

I further certify that said testimony of said witnesses was taken down by me in shorthand, and reduced to typewriting, and was then read over by said witnesses and corrected by them, and thereupon the said witnesses subscribed their names thereto.

Witness my hand, city of Washington, District of Columbia, this the 9th day of November, A. D. 1897.

CLARENCE L. TREVITT,
Special Examiner.

Defendants' Exhibit "A."

(To Deposition of S. S. Marr.)

A. Marr. 12.

THE UNITED STATES
vs.
THE SOUTHERN PACIFIC RAILROAD CO. et al.

675, 7 and 662, Consolidated. Deft. Exhibit S. S. M. "A." C. L. Trevitt, Special Examiner.

(No. 1.)

——— of ———, } ss.
County of ———.

———————, of ———, in said county and ———, being duly sworn, deposeth and says that he is the chief engineer of the ————, and has been such chief engineer since the ———; that during the period above named ———————— were employed by this deponent as chief engineer for said railroad company, as deputy or division engineers; that the said engineers, as shown by their fieldnotes, verified under oath, did actually survey

and mark upon the ground the line of route of the ——— from ——— to ———, in the sections and at the times respectively designated by dates, which are included between the flagstaffs upon and along the line of route of said railroad as delineated on this map, showing the line of the public survey in connection with the surveyed line of the route; and that the acts of said deputy or division engineers in the premises were duly approved and accepted on behalf of said company by this deponent as said chief engineer of the ———.

———,
Chief Engineer.

Sworn and subscribed this ——— day of ———, before me.

[Seal]

———,
Notary Public.

The map of location must, as shown in the above form, in all cases show the lines of the public survey in connection with the line of route.

Certificates for Maps of the Surveys and Permanent Locations, etc.

Form No. 1. Of engineer's affidavit to map of definite location.

Form No. 2. Of president and engineer's certificate to same.

Form No. 3. Of engineer's affidavit to map of completed portion of railroad.

Form No. 4. Of president's certificate to same.

Form No. 5. Of engineer's affidavit to map of definite location where grant was made to a state or territory.

Form No. 6. Of certificate of governor of State or territory to map of definite location.

Form No. 7. Of certificate of governor to map of completed portion of railroad.

Nos. 1, 2, 3, and 4 to be used when grant was direct to the railroad.

Nos. 1, 3, 4, 5, 6, and 7 to be used when grant was made to the State of territory.

Defendants' Exhibit "B."

(To Deposition of S. S. Marr.)

B. Marr 13.

THE UNITED STATES

vs.

THE SOUTHERN PACIFIC RAILROAD CO. et al.

675, 587 and 662, Consolidated. Deft. Exhibit S. S. M. "B." L. Trevitt, Special Examiner.

(No. 2)

Office of the ———,

———, ———,

———, 18—.

It is hereby certified that, in pursuance of the act of Congress, approved July 1, 1862, entitled "An act to aid in the construction of a railroad and telegraph line from the Missouri river to the Pacific ocean, and to secure to the Government the use of the same for postal, military, and other purposes," wherein a grant of lands is made by the ——— section to the ———, who are thereby authorized to construct a railroad and telegraph line from ———, and the act of July 2, 1864, amendatory thereof, which ——— to construct said railroad, this map shows the location of the line or route of the ——— from

——— to ———, being a part of the line or route of said railroad as definitely fixed, in compliance with said acts of Congress and in pursuance of the resolution of the board of directors of said company, passed on the ———; and that the dates of the field work thereof are truly indicated along the line, from station to station, upon this map.

In testimony whereof the ——— has caused the same to be signed by its president and engineer, and has attached hereunto its corporate seal at ———, on the day and year first above written.

[Seal]

———,
President.

———,
Chief Engineer.

Attest:

———,
Secretary.

J. I. P. "A" E. H. H.
M. C. McN.

1-480.

(Vignette)

UNITED STATES OF AMERICA.

Department of the Interior.

Washington, D. C., Sept. 29, 1897.

Pursuant to section 882 of the Revised Statutes, I hereby certify that the annexed papers are copies respectively of the original letters on file in this department.

In testimony whereof, I have hereunto subscribed my name, and caused the seal of the department of the interior to be affixed, the day and year first above written.

[Seal]

C. N. BLISS,
Secretary of the Interior.

[Written in ink:] Department of the Interior, Jul. 30, 1873.

Texas & Pacific Railway Company.

Office 50 Exchange Place,

New York, July 1, 1873.

Hon. C. Delano, Secretary of the Interior, Washington, D. C.

Sir: In conformity with section 13 of the charter of this company, I have the honor to submit herewith a report exhibiting the financial situation of the Texas & Pacific Railway Co. on the 1st day of July, 1873, embracing in detail its business for the year ending at that date, together with a description of the lines of road surveyed and fixed upon for construction.

I am,

Very respectfully yours,

THOMAS A. SCOTT,

President.

[Written in ink:] Department of the Interior, Nov. 10, 1874.

Texas and Pacific Railway Company.

Office of the President,

Philadelphia, November 7, 1874.

Hon. C. Delano, Secretary of the Interior, Washington, D. C.

Sir: In compliance with the law governing railroad corporations chartered by the general government, I have

the honor to submit herewith a report exhibiting the financial condition of the Texas and Pacific Railway Company on the 1st day of July, 1874, together with the operations of the road for the year ending on that date.

Very respectfully,

THOMAS A. SCOTT,

Pres.

Thos. A. Scott, Prest.

Frank S. Bond, } Vice-Prests.
John C. Brown, }

Geo. D. Krumbhaar, Treasr.

C. E. Satterlee, Secy.

[Written in ink:] Department of the Interior, Sep. 27, 1876.

Executive Office, Texas and Pacific Railway Company,
275 South Fourth Street,
Philadelphia, Pa., Sept. 28, 1876.

Hon. Z. Chandler, Secretary of the Interior, Washington, D. C.

Sir: In obedience to section 13 of the charter of this company, dated March 3, 1871, I have the honor to sub-

mit herewith a report of the operation of the Texas & Pacific Ry. Company for the year ending June 30, 1876.

I am,

Very respectfully yours,

THOMAS A. SCOTT,

Pres. T. & P.

Thos. A. Scott, Prest.

Frank S. Bond, } Vice-Prests.
John C. Brown, }

Executive Office Texas and Pacific Railway Company,

275 South Fourth Street,

Philadelphia, Pa., Oct. 1st, 1877.

Hon. Carl Schurtz, Secretary of the Interior, Washington, D. C.

Sir: In obedience to section 13 of the charter of this company, dated March 3, 1871, I have the honor to submit herewith a report of the operations of the Texas & Pacific Railway Company for the year ending June 30, 1877.

I am,

Very respectfully yours,

THOMAS A. SCOTT,

Pres. Tex. & Pacific Railway Company.

[Endorsed]: The United States vs. Southern Pacific Railroad Co. et al. 675, 662, 587, Consolidated. Defendants' Exhibit A. M. "A." C. L. Trevitt, Special Examiner.

A. Martin	"B"	E. H. H.
J. I. P.	1,480	M. C. McN.

(Vignette)

UNITED STATES OF AMERICA.

Department of the Interior,

Washington, D. C., Sept. 29, 1897.

Pursuant to section 882 of the Revised Statutes, I hereby certify that the annexed papers are copies, respectively, of the original letters of record in this department.

In testimony whereof, I have hereunto subscribed my name and caused the seal of the department of the interior to be affixed, the day and year first above written.

[Seal] C. N. BLISS,

Secretary of the Interior.

Department of the Interior.

Washington, D. C., 1st August, 1873.

Sir: I am in receipt of your letter of the 1st ult., transmitting report of Texas and Pacific Railway Company for the year ending 30th June, 1873. It has, with your letter, been filed in this department.

Very respectfully,

B. R. COWEN,
Acting Secretary.

Thos. A. Scott, Esq., Prest. of the Co., 50 Exchange Place, N. York City.

Department of the Interior.

Washington, D. C., 11th November, 1874.

Sir: I am in receipt of your letter of the 7th instant, transmitting the report of *of* the Texas & Pacific Railway Company for the year ending 30th June, 1874. It has, with the report, been filed in the department.

Very respectfully,

B. R. COWEN,
Acting Secretary.

Thos. A. Scott, Esq., Prest. of the Co., Philadelphia, Pa.

Department of the Interior.

Washington, D. C., 28th September, 1876.

Sir: I have received your letter of this date, and the accompanying annual report of Texas and Pacific Railway Company for the year ending 30th June, 1876.

I am sir,

Very respectfully,

Your obt. servant,

CHAS. T. GORHAM,

Acting Secretary.

Hon. Thos. A. Scott, Prest. Tex. & Pac. R. W. Co., 275 South 4th St., Philadelphia, Penn.

Department of the Interior.

Washington, D. C., 2d October, 1877.

Hon. Thos. A. Scott, Prest. of Texas & Pac. R. W. Co., Philadelphia, Pa.

Sir: I have the honor to acknowledge the receipt of your letter of yesterday, and the accompanying report of the Texas and Pacific Railway Company for the year ending 30th June, 1877.

I am, sir,

Very respectfully,

Your obt. servant,

A. BELL,

Acting Secretary.

[Endorsed]: The United States vs. The Southern Pacific Railroad Co. et al. 675, 662, 587, Consolidated. Deft. Exhibit A. M. "B." C. L. Trevitt, Special Examiner.

At a stated term, to wit, the January term, A. D. 1897, of the Circuit Court of the United States of America, of the Ninth Judicial Circuit, in and for the Southern District of California, held at the courtroom in the city of Los Angeles, on Monday, the twelfth day of July, in the year of our Lord one thousand eight hundred and ninety-seven. Present: The Honorable ERSKINE M. ROSS, Circuit Judge.

THE UNITED STATES OF AMERICA,
Complainants,
vs.
THE SOUTHERN PACIFIC RAILROAD COMPANY, D. O. MILLS and HOMER S. KING, Trustees, and THE CENTRAL TRUST COMPANY OF NEW YORK, THE SOUTHERN PACIFIC COMPANY OF KENTUCKY, THE COLORADO RIVER IRRIGATION COMPANY,
Defendants.

Nos. 675, 587 and 662 Consolidated.

Order Appointing Clarence L. Trewitt Special Examiner, etc.

Upon the application of Joseph H. Call, Esq., special assistant United States attorney, and good cause appearing therefor, and no objection being made by defendants,

it is ordered that Clarence L. Trevitt, Esq., of Washington, District of Columbia, be, and he is hereby, appointed a special examiner and stenographer of this court, to take testimony in said cause at Washington, District of Columbia, and at the city of New York, in the State of New York, said testimony, when so taken, to be transmitted to this Court in accordance with the rules of court.

I, Wm. M. Van Dyke, clerk of the Circuit Court of the United States, for the Southern District of California, do hereby certify the foregoing to be a full, true, and correct copy of an original order made and entered by said Court July 12, 1897, in the cause entitled The United States of America, Complainants, vs. The Southern Pacific Railroad Company et al., Defendants, Nos. 675, 587, and 662 Consolidated, and now remaining of record therein.

Attest my hand and the seal of said Circuit Court, this 13th day of July, A. D. 1897.

[Seal] WM. M. VAN DYKE,
Clerk.

[Endorsed]: Nos. 675, 587, and 662 Consolidated. U. S. Circuit Court, Ninth Circuit, Southern District of California. The United States of America vs. The Southern Pacific Railroad Company et al. Certified copy of order appointing special examiner.

In the United States Circuit Court, for the Southern District of California, Ninth Circuit.

THE UNITED STATES,
Plaintiffs,

vs.

THE SOUTHERN PACIFIC RAILROAD COMPANY, D. O. MILLS, and HOMER S. KING, Trustees, THE CENTRAL TRUST COMPANY OF NEW YORK, THE SOUTHERN PACIFIC COMPANY OF KENTUCKY, and THE COLORADO RIVER IRRIGATION COMPANY,
Defendants.

Consolidated Nos. 587, 675, 662.

Notice to Take Testimony.

To the defendants in the above-entitled cause, and to Walter J. Trask, Lewis E. Payson, William Singer, Junior, William F. Herrin, W. H. H. Hart, Page, McCutcheon & Eells, and Butler, Notman, Joline & Mynderse, attorneys and counsel for said defendants:

You will please take notice that on the 30th day of Sept., A. D. 1897, at rooms 1 and 2, number 505, E street,

Northwest, in the City of Washington, District of Columbia, between the hours of ten o'clock in the forenoon, and 4 o'clock in the afternoon, the United States will commence the taking of testimony of Jos. U. Crawford and others in the above-entitled cause before Clarence L. Trevitt, special examiner and stenographer, thereunto appointed by the United States Circuit Court for the Southern District of California.

At the same time and place documentary evidence will also be produced.

Said testimony will be taken orally, and, in pursuance of an order of said special examiner, will be taken in shorthand.

The taking of said testimony will be continued from time to time and from place to place, as may be determined by said special examiner.

You are requested to appear and cross-examine said witnesses.

JOSEPH H. CALL,
Special Assistant U. S. Atty.

State of California, }
County of Los Angeles. } ss.

Berton E. Vickrey, being first duly sworn, deposes and says: That on the 7th day of September, 1897, he served the foregoing and annexed notice of taking of testimony upon the above-named defendants and upon their respective solicitors and counsel as follows:

That he served said Walter J. Trask, as attorney for said defendants, by personally delivering to said Trask

at his office, in the City of Los Angeles, California, a copy of the foregoing and annexed notice on the 7th day of September, 1897.

That each of said defendants in said cause is a non-resident of the Southern District of California, except said Walter J. Trask.

That neither of said solicitors or counsel has designated any place where service may be made upon them, or either of them, in said city of Los Angeles, California, as required by the rules of this court.

That service was further made upon said parties defendant and their solicitors and attorneys, by filing and depositing in the office of the clerk of the United States Circuit Court for the Southern District of California an original duplicate of said notice on the 7th day of September, 1897. BERTON E. VICKREY.

Subscribed and sworn to before me, this 7th day of September, A. D. 1897.

[Seal] GEORGE L. KEEFER,

Notary Public for Los Angeles County, State of California.

[Endorsed]: No. 675 Consolidated. In U. S. Circuit Court. So. Dist. Cal. United States vs. Southern Pac. R. Co. et al. Notice to take testimony. Served Sept. 7, 1897. (Original for J. H. Call.)

In the United States Circuit Court, for the Southern District of California, Ninth Circuit.

THE UNITED STATES,
Plaintiffs,

vs.

THE SOUTHERN PACIFIC RAILROAD COMPANY, D. O. MILLS and HOMER S. KING, Trustees, THE CENTRAL TRUST COMPANY OF NEW YORK, THE SOUTHERN PACIFIC COMPANY OF KENTUCKY, and THE COLORADO RIVER IRRIGATION COMPANY,
Defendants.

Consolidated Nos. 587, 675, 662.

Order of Special Examiner Fixing Time for Taking Testimony.

Upon application of Mr. Joseph H. Call, special assistant United States attorney in the above-entitled cause made before me this 30th day of August, 1897, at my office, number 505, E. street, N. W., in the city of Washington, District of Columbia, it is hereby ordered that ten days, exclusive of the day of service, is hereby fixed as the time for service upon the defendants or their coun-

sel for taking testimony in said cause, before me, as special examiner and stenographer, in the city of Washington.

It is further ordered that such service of notice of taking such testimony shall be made in accordance with the rules of the United States Circuit Court, for the Southern District of California.

It is further ordered, upon like application, that the testimony in said cause before me shall be taken down in shorthand by me and thereafter reduced to writing or typewriting by me.

CLARENCE L. TREVITT,
Special Examiner.

Examiner and Stenographer's fees.

September 30, 1897, to per diem as special examiner—one day	$10.00
September 30 and October 1st and 2d, stenographic work and typewriting same, 57 folios, at 20	11.40
Certificate	.25
Total	$21.65

I hereby certify that the foregoing is a true and correct statement of account of fees and charges of special examiner and stenographer.

CLARENCE L. TREVITT,
Special Examiner and Stenographer.

[Endorsed]: No. 675. Order of special examiner. Dep. Fld. Dec. 8, '97. Wm. M. Van Dyke. 675. In the United States Circuit Court, for the Southern District of California, Ninth Circuit. The United States vs. The Southern Pacific Railroad Co. et al. Testimony in behalf of complainants and defendants, taken at Washington, D. C., before Clarence L. Trevitt, special examiner and stenographer. C. L. Trevitt, Special Examiner. Filed May 13, 1898. Wm. M. Van Dyke, Clerk.

In the Circuit Court of the United States, Ninth Circuit, Southern District of California.

THE UNITED STATES,
Complainants,

vs.

THE SOUTHERN PACIFIC RAILROAD COMPANY, D. O. MILLS, and GERRIT L. LANSING, Trustees, CENTRAL TRUST COMPANY OF NEW YORK, SOUTHERN PACIFIC COMPANY OF KENTUCKY, and COLORADO RIVER IRRIGATION COMPANY,
Defendants.

Consolidated Nos. 675, 587, and 662.

Testimony.

Testimony taken on behalf of defendants before Stephen Potter, special examiner and stenographer, by

consent and order this day made, at the office of William Singer, Jr., rooms 61, 62, Union Trust building, in San Francisco, California, commencing this 12th day of January, A. D. 1898. Present, Joseph H. Call, Esq., special attorney for the United States, and William Singer, Jr., attorney for the defendants; and there also appeared Mr. W. H. H. Hart, attorney for the defendant Colorado River Irrigation Company.

Thereupon the following proceedings were had:

Testimony of JEROME MADDEN.

JEROME MADDEN, called as a witness on behalf of the defendants, being first duly sworn, testified as follows:

Mr. SINGER.—Mr. Call, my understanding is that this suit is dismissed as to all lands described in the complainants' amended bill which lie northerly of the southerly thirty mile withdrawal limits for the Atlantic & Pacific grant under the congressional act of July 27th, 1866, and also dismissed as to all lands shown on Exhibit "A" to the defendants' answer, as patented to and sold by the Southern Pacific Railroad Company, except such patented lands as are subject of contract No. 11,322, issued by the Southern Pacific Railroad Company to the defendant Colorado River Irrigation Company. Am I correct in this understanding?

Mr. CALL.—That is my understanding. The dismissals were without prejudice.

Mr. SINGER.—Mr. Call, I will ask you to agree that any differences of description of lands between Exhibit

"A" to the defendants' answer and the order of dismissal may be corrected at any time to conform to that exhibit.

Mr. CALL.—The order of dismissal may be corrected if erroneous, if it includes any lands not shown by said Exhibit "A" to have been patented to the Southern Pacific Railroad Company and sold prior to this suit, other than the lands described in the contract of the Colorado River Irrigation Company.

Mr. SINGER.—Suppose the order of dismissal omits lands shown by Exhibit "A" to have been patented to the company and sold by it, other than the lands of the Colorado River Irrigation Company's contract, may it also be corrected in respect of such lands?

Mr. CALL.—Yes.

Mr. SINGER.—Q. You are the land agent of the Southern Pacific Railroad Company, one of the defendants in this action, are you not? A. I am.

Q. How long have you been such land agent?

A. Twenty-one years and eight months.

Q. Are you the custodian of the contracts issued by the Southern Pacific Railroad Company for the sale of its lands? A. I am.

Q. Do you keep a record in your office of all the deeds issued by the company conveying lands sold by it?

A. I do.

Q. Do your records correctly show all contracts and deeds issued by the company for the sale of its lands, and the price of such sales?

Mr. CALL.—Objected to as incompetent, immaterial, and irrelevant.

A. They do.

Mr. SINGER.—Q. The complainants' amended bill in this suit, as it stood before it was dismissed as to any of the lands, included all odd-numbered sections within thirty miles of that portion of the Southern Pacific's branch line railroad which extends from the west line of range 7 west to the Colorado river; did you ever prepare a statement showing the status of the lands sold by your company within the limits defined by the amended bill?

(Same objection.)

A. I made such a statement.

Q. Have you a copy with you of the statement you made?

(Same objection.)

A. I have.

Q. Will you kindly produce it?

(Same objection.)

A. I produce a press copy of the statement. (Producing.) It was delivered to Mr. Singer between the dates of July 3d, 1896, and July 11th, 1896; it consists of all the matter contained on and from pages 1 to 417, inclusive, of book marked "A1"; Mr. Singer wanted it made very much in detail, and of course I complied with his wishes in the matter.

Q. Have you with you a form of the sheet upon which that was written?

(Same objection.)

A. I have; here it is. (Producing blank form.)

Mr. SINGER. We will ask that that be admitted in evidence and marked "Defendants' Exhibit No. 44."

(Blank form used for showing the status of lands sold is marked "Defendants' Exhibit No. 44," and annexed hereto.)

(Same objection.)

Q. Was that statement made by you or under your supervision?

(Same objection.)

A. It was made by my direction and under my immediate supervision by clerks in the landoffice of the Southern Pacific Railroad Company.

Q. Is it a correct statement of all the matters shown upon the sheets?

(Same objection.)

A. Personally, I have not examined it, but I believe that it is, and believing so, I swear that it is.

Q. Was it compared and checked with the records of your office in respect to all the matters disclosed upon it?

(Same objection.)

A. It was compared and checked with very great care.

Mr. SINGER.—I will withdraw Mr. Madden for a few moments and be sworn myself.

JEROME MADDEN.

Testimony of WILLIAM SINGER, Jr.

WILLIAM SINGER, Jr., called as a witness on behalf of the defendants, being first duly sworn, testified as follows:

The WITNESS.—The original sheets, paged from No. 1 to No. 417, a press copy of which has just been presented by the witness Jerome Madden, was given to me by him for the purpose of an exhibit to the answer of the defendants now on file in this suit. I drafted the answer of the defendants in this suit and made Exhibit "A" a part of it by reference. he sheets which constitute Exhibit "A" are the identical sheets given me by Mr. Jerome Madden, and about which he has testified. I made up Exhibit "A" from them without any alteration whatsoever, and the Exhibit "A" as now on file in the office of the clerk of this court is composed of the identical sheets about which Mr. Madden has testified.

(The signature of William Singer, Jr., to his testimony as above given was waived by counsel.)

Testimony of JEROME MADDEN (Continued.)

Mr. SINGER.—I will now offer in evidence, as Defendants' Exhibit No. 45, Exhibit "A" to the defendants' answer in this suit, filed in the office of the clerk of this court on or about July 23d, 1896.

(Same objection.)

Q. How many forms of contracts have been used in your office in making sales of the company's lands?

(Same objection.)

A. Except a special contract that was made with the Colorado River Irrigation Company, there are two, one for patented lands, and the other for unpatented lands.

Q. Have you with you the contract made with the Colorado River Irrigation Company of which you have spoken?

(Same objection.)

A. Yes; this is the special contract that I spoke of as having been made the 8th of December, 1893, between the Southern Pacific Railroad Company, the party of the first part, and the Colorado River Irrigation Company, of Colorado, the party of the second part. (Producing contract.)

Q. That contract is numbered 11,322, is it not?

(Same objection.)

A. The contract is numbered 11,322.

Mr. SINGER.—I will offer the contract in evidence, and ask that it be marked as "Defendants' Exhibit No. 46," and that a copy be made by the examiner and attached to the record, and the original returned to Mr. Madden. Will you object, Mr. Call, to the substitution of a copy for the original?

Mr. CALL.—No objection. Let the copy be compared by the examiner and certified by him.

Mr. SINGER.—Yes, sir.

(Same objection to the offer.)

(Contract for a deed No. 11,322, Southern Pacific Railroad Company to the Colorado River Irrigation Company, dated December 8th, 1893, is marked "Defendants' Exhibit No. 46," a copy of which, duly certified by the examiner, is annexed hereto.)

Q. Have you with you the forms of contract used by you in the sale of lands?

(Same objection.)

A. I have; that is the form of contract that was used for the sales of unpatented lands. (Producing blank form.)

Mr. SINGER.—I will now introduce in evidence the form of contract for the sale of unpatented lands produced by the witness, and ask that it be marked "Defendants' Exhibit No. 47."

(Same objection.)

(Blank form of contract for a deed of unpatented lands is marked "Defendants' Exhibit No. 47," and annexed hereto.)

Q. For what class of lands do you say this contract for unpatented lands is used for the sale of?

(Same objection.)

A. It is used for the sales of lands for which the Southern Pacific Railroad Company have not yet received patents.

Q. You may state whether all the contracts, an abstract of which appears on the Exhibit "A" to the defendants' answer, for lands unpatented, are written upon the form of contract labeled "Unpatented form," just introduced in evidence.

(Same objection.)

A. To the best of my knowledge they re.

Q. Excepting the Colorado River Irrigation Company contract No. 11,322?

(Same objection.)

A. Excepting the Colorado River Irrigation Company contract No. 11,322.

Q. You may state whether all the sales of unpatented lands abstracted on the sheets in Exhibit "A" to defendants' answer in this cause represent genuine transactions?

(Same objection.)

A. Indeed they do.

Q. Was the amount in each instance there shown to have been received the actual amount received by the company for the sale of the lands?

(Same objection.)

A. Indeed it was; I never knew and never have had any one instance of any sale that was not genuine.

Q. Did the persons purchasing the unpatented lands under those contracts or deeds purchase in good faith, believing the company to be the owner of the lands?

(Same objection.)

A. They purchased absolutely in good faith, paid their money, and believed that they were going to get a title, and by that I mean that they believed that the Southern Pacific Railroad Company had such a claim to the land, if claim I may call it, that it would actually ripen into a title.

Q. Was the land in each instance sold for its full value, as you appraised and believed it to be at the time?

(Same objection.)

A. It was sold for its full value; it was examined with a great deal of care, and after the report of the land examiner, or land grader, was brought in, it was examined in the office with a great deal of care, and it was all sold for the graded price.

Q. Was there in any instance a reduced price fixed for any land because of a supposition or belief that possibly or probably the company's title was not as good as it might be?

(Same objection.)

A. There never has been one instance of that kind; in fact, the Southern Pacific Railroad Company does not do, as far as my knowledge extends, anything of that kind.

Q. Can you produce all the contracts and deeds for unpatented lands abstracted on Exhibit "A" to defendants' answer?

(Same objection.)

A. I can, except, perhaps, some of them may be used as exhibits in a court of law, and some very few of them may be in a condition of that kind.

Mr. SINGER.—Mr. Call, I will, if you desire, produce each contract and deed abstracted on the sheets which make up Exhibit "A" to the defendants' answer, if you require me to, but I will ask, in the interest of economy of time, expense, and the record, that you satisfy yourself in respect of the correctness of Exhibit "A," and excuse the production of the contracts and deeds.

Mr. CALL.—I will waive the production of the original contacts and deeds, and substitute therefor the abstract showing sales contained in Exhibit "A" attached to the answer, together with the form of contract under which those sales were made, which has been offered in evidence and marked "Defendants' Exhibit No. 47." Is that satisfactory?

Mr. SINGER.—That is satisfactory.

Q. Have you used more than one form of deed in executing the sale of unpatented lands?

(Same objection.)

A. There were very few deeds made for unpatented

lands; for lands of all descriptions we have used this form of deed. (Producing blank form.)

Mr. SINGER.—I will introduce the form of deed referred to by the witness in evidence, and ask that it be marked "Defendants' Exhibit No. 48."

(Same objection.)

(Blank form of deed marked "Defendants' Exhibit No. 48," and annexed hereto.)

Mr. CALL.—Will you permit me to ask the witness a question at this time?

Mr. SINGER.—Certainly.

Mr. CALL.—Q. You say in making deeds for some of the tracts in Exhibit "A" which are unpatented that you used this form which you now produce, and in some instances you gave a quitclaim deed; did I understand you correctly?

A. Yes; as I said before, there were very few deeds issued for unpatented lands; of which few some were grant, bargain, and sale deeds according to that form presented, and a few were sold by quitclaim deed, practically on the same form as that, except that the conveying words were changed from "grant, bargain, and sole," to "remise, release, and quitclaim."

Mr. SINGER.—Q. Approximately, about how many deeds for unpatented lands in this suit are of the quitclaim form, would you say?

(Same objection.)

A. I could not tell exactly without making examination, but I should not say that there were more than probably three or four—half a dozen, at the outside; maybe not so many.

Mr. CALL.—Q. And how many of the other form?

A. Maybe two or three, three or four.

Mr. SINGER.—Q. Wherever a deed has been made of unpatented land it is shown upon the sheets in Exhibit "A" to the defendants' answer, is it not?

(Same objection.)

A. Yes.

Q. Have you with you any of the lists selecting lands of the Southern Pacific branch line grant, which lands have not yet been patented?

(Same objection.)

A. I have.

Q. Will you produce them?

(Same objection.)

A. Here they are. (Producing lists.)

Mr. SINGER.—The lists produced by the witness are lists numbers 12, 40, 49, 64, 70, and 89. I will now introduce in evidence list No. 12 of lands selected by the Southern Pacific Railroad Company within the granted limits, Los Angeles, landoffice, dated December 19th, 1893, on the cover, and will ask that the examiner make a copy of the certificates thereof and so much of the lands described as are shown on Exhibit "A" not to have been patented to the company. Is that satisfactory?

Mr. CALL.—There is no objection to substituting a copy for the original, saving the same objections.

(Marked "Defendants' Exhibit No. 49," and certified copy of the portions referred to in the offer annexed hereto.)

Mr. SINGER.—I will introduce in evidence list No. 40 of lands selected by the Southern Pacific Railroad Com-

pany within the granted limits, Los Angeles landoffice, dated April 23d, 1888, on the cover, and will ask that the examiner make a copy of the certificates thereof and so much of the lands described as are shown on Exhibit "A" to defendants' answer not to have been patented to the company.

(Same objection, but objection to substituting the copy for the original waived.)

(List No. 40 is marked "Defendants' Exhibit No. 50," and a certified copy of the portions thereof referred to in the offer is annexed hereto.)

Mr. SINGER.—I will offer in evidence list No. 49 of lands selected by the Southern Pacific Railroad Company within the granted limits, Los Angeles landoffice, dated November 25th, 1889, on the cover, and will ask that the examiner make a copy of the certificates thereof and so much of the lands described as are shown on Exhibit "A" to the defendants' answer not to have been patented to the company.

(Same objection, waiving objection to substitution of a copy for the original.)

(List No. 49 is marked "Defendants' Exhibit No. 51," and a certified copy of the portions thereof referred to in the offer is annexed hereto.)

Mr. SINGER.—I offer in evidence list No. 64 of lands selected by the Southern Pacific Railroad Company within the granted limits, Los Angeles landoffice, dated October 26th, 1891, on the cover, and will ask that the examiner make a copy of the certificates thereof and so much of the lands described as are shown on Exhibit "A"

to defendants' answer not to have been patented to the company.

(Same objection, waiving objection to the substitution of the copy of the original.)

(List No. 64 is marked "Defendants' Exhibit No. 52," and a certified copy of the portions of same referred to by counsel in his offer is annexed hereto.)

Mr SINGER.—I introduce in evidence list No. 70 of lands selected by the Southern Pacific Railroad Company within the granted limits, Los Angeles landoffice, and will ask that the examiner make a copy of the certificates thereof and so much of the lands described as are shown on Exhibit "A" to the defendants' answer not to have been patented to the company.

(Same objection waiving objection to the substitution of a copy in lieu of the original.)

(List No. 70 is marked "Defendants' Exhibit No. 53," and a certified copy of the portions thereof referred to by counsel in his offer is annexed hereto.)

Mr. SINGER.—I will introduce in evidence list No. 89 of lands selected by the Southern Pacific Railroad Company within the granted limits, Los Angeles landoffice, dated May 21st, 1896, on the cover, and will ask that the examiner make a copy of the certificates thereof and so much of the lands described as are shown on Exhibit "A" to the defndants' answer not to have been patented to the company.

(Same objection, waiving objection to the substitution of a copy for the original.)

(List No. 89 is marked "Defendants' Exhibit No. 54,"

and a certified copy of the portions thereof referred to by Mr. Singer in his offer is annexed hereto.)

Mr. SINGER.—Mr. Call, we stipulated in suit No. 587 consolidated here that either party might introduce any documents introduced in evidence in suit No. 68, or No. 184 on the docket of this court, each of which suits was brought by the United States against the Southern Pacific Railroad Company and others ,without objection to such document because of its being a part of the record of another case, subject to all objections as to its competency, materiality, and relevancy. May that stipulation still continue in this suit?

Mr. CALL.—Yes. I am agreeable to extending the stipulation to the present consolidated suit.

Mr. SINGER.—I will now offer in evidence the trust mortgage made April 1st, 1875, by the Southern Pacific Railroad Company to D. O. Mills and Lloyd Tevis as trustees, being Defendants' Exhibit No. 90" in suit No. 184 on the docket of this court, brought by the United States against the Southern Pacific Railroad Company and others, and ask that it be admitted as "Defendants' Exhibit No. 55 in this suit.

(Same objection.)

Mr. SINGER.—Mr. Call, you are familiar with the facts, and it will save time for you to admit that prior to the commencement of these suits Gerrit L. Lansing was substituted for Lloyd Tevis as trustee under this mortgage, and that thereafter Lansing died, and on March 21st, 1896, Homer S. King was substituted for him as such trustee. I will ask you to admit that.

Mr. CALL.—Yes; those facts are admitted, with the understanding that the suit was continued against the present trustees.

Mr. SINGER.—My understanding is that Homer S. King has ben substituted for Lansing as trustee.

Mr. CALL.—Yes.

Mr. SINGER.—I will offer in evidence the trust deed made on August 25th, 1888, by the Southern Pacific Railroad Company to the Central Trust Company of New York, which appears as the "Defendants' Exhibit No. 91," in suit No. 184, on the docket of this court, brought by the United States against the Southern Pacific Railroad Company and others, and ask that it be admitted in evidence in this case as "Defendants' Exhibit No. 56."

(Same objection.)

Mr. SINGER.—I will offer in evidence testimony of William Salomon, taken before Patrick A. Nolan, a notary public in Kings county, New York, on November 6th, 1893, on behalf of the defendants in suit No. 184 on the docket of this court, brought by the United States against the Southern Pacific Railroad Company and others, and ask that it be admitted and marked "Defendants' Exhibit No. 57" in this case.

(Same objection.)

Mr. SINGER.—I will also offer in evidence the testimony of George T. Folsom, taken before special examiner Stephen Potter on August 6th, 1896, in suit No. 600, on the docket of this court, brought by the United States against the Southern Pacific Railroad Company and others, and ask that it be admitted in evidence and marked "Defendants' Exhibit No. 58" in this suit.

(Same objection.)

Mr. SINGER.—I will also offer in evidence the testimony of Frank S. Douty, taken before special examiner Stephen Potter on August 6th, 1896, in suit No. 600 on the docket of this court, brought by the United States against the Southern Pacific Railroad Company and others, and ask that it be admitted in evidence as "Defendants' Exhibit No. 59" in this suit.

(Same objection.)

Mr. SINGER.—I will offer in evidence a copy, certified on September 29th, 1897, by Binger Hermann, as commissioner of the general landoffice, of a leter dated April 24th, 1896, from Hoke Smith, secretary of the interior, to the commissioner of the general landoffice:

A letter dated April 28th, 1896, from S. W. Lamoreaux, commissioner, to the secretary of the interior.

A letter dated April 28th, 1896, from Harry King, chief of the drafting division, to the commissioner of the general landoffice.

A letter dated April 29th, 1896, from S. W. Lamoreaux, commissioner to the secretary of the interior.

All attached together, under the same certificate, and ask that they be admitted in evidence as "Defendants' Exhibit No. 60."

(Same objection.)

(Marked "Defendants' Exhibit No. 60" and annexed hereto.)

Mr. SINGER.—Mr. Call, I will exhibit to you three several certified copies of maps, each certified on April 26th, 1897, by Binger Hermann, as commissioner of the general landoffice, to be a true copy of the original, one purport-

ing to be a copy of the map of the State of California, published by the department of the interior for the year 1876; another purporting to be a similar map published by the department of the interior for the year 1879; and the third purporting to be a similar map published by the department of the interior for the year 1885; upon each of which a line is shown labeled "Texas Pacific Railroad," which line follows substantially the course of the line shown upon the Atlantic and Pacific withdrawal map in evidence, filed in the office of the commissioner of the general landoffice in September, 1871, and upon each map is also shown a twenty mile withdrawal line extended parallel to the railroad line; and will ask that in order to save the expense of the maps in the record that you admit that the maps, if introduced, would show as here stated.

Mr. CALL.—That is agreeable, and the fact shall be so stipulated, subject to my objection as immaterial and irrelevant.

Mr. SINGER.—Q. Have you with you the patents from the United States which convey to the Southern Pacific Railroad Company the lands subject to this suit, and not described on Exhibit "A' to the defendants' answer because of not having been sold by the company?

(Same objection.)

A. I have here fifteen patents which show lands within the territory mentioned in this case, and which have not been sold by the company; that is to say, some lands described in these patents have been sold, and some have not. (Producing patents.)

Mr. SINGER.—I will offer in evidence patent No. 2, produced by the witness, from the United States to the Southern Pacific Railroad Company, dated April 4th, 1897, and wil ask that the examiner copy so much of it as conveys lands involved in this suit but not described on Exhibit "A" to the defendants' answer, and attach it to the record as "Defendants' Exhibit No. 61," and then return the original to me. Is that satisfactory?

Mr. CALL.—Yes.

(Same objection.)

(Patent No. 2 is marked "Defendants' Exhibit No. 61." See stipulation on page 28 of this record.)

Mr. SINGER.—I will offer in evidence patent No. 3, issued by the United Staes to the Southern Pacific Railroad Company, dated December 2d, 1880, and ask the examiner to copy so much of it as conveys lands involved in this suit but not described on Exhibit "A" to the defendants' answer, and attach it to the record as "Defendants' Exhibit No. 62,' and then return the original to me.

(Same objection, waiving objection to a copy being substituted in lieu of the original.)

(Patent No. 3 is marked "Defendants' Exhibit No. 62." See stipulation on page 28 of this record.)

Mr. SINGER.—I will offer in evidence patent No. 6, issued by the United States to the Southern Pacific Railroad Company, dated December 27th, 1883; and ask the examiner to copy so much of it as conveys lands involved in this suit but not described on Exhibit "A" to the defendants' answer, and attach it to the record as "Defendants' Exhibit No. 63," and then return the original to me.

(Same objection, waiving objection to a copy being substituted in lieu of the original.)

(Patent No. 6 is marked "Defendants' Exhibit No. 63." See stipulation on page 28 of this record.)

Mr. SINGER.—I will offer in evidence patent No. 7, issued by the United States to the Southern Pacific Railroad Company, dated December 27th, 1883, and ask the examiner to copy so much of it as conveys lands involved in this suit but not described on Exhibit "A" to the defendants' answer, and attach it to the record as "Defendants' Exhibit No. 64," and then return the original to me.

(Same objection, waiving objection to a copy being substituted in lieu of the original.)

(Patent No. 7 is marked "Defendants' Exhibit No. 64." See stipulation on page 28 of this record.)

Mr. SINGER.—I will offer in evidence patent No. 9, issued by the United States to the Southern Pacific Railroad Company, dated January 9th, 1885, and ask the examiner to copy so much of it as conveys lands involved in this suit, but not described on Exhibit "A" to the defendants' answer, and attach it to the record as "Defendants' Exhibit No. 65," and then return the original to me.

(Same objection, waiving objection to a copy being substituted in lieu of the original.)

(Patent No. 9 is marked "Defendants' Exhibit No. 65." See stipulation on page 28 of this record.)

Mr. SINGER.—I will offer in evidence patent No. 18, issued by the United States to the Southern Pacific Railroad Company, dated October 7th, 1891, and ask the examiner to copy so much of it as conveys lands involved

in this suit but not described on Exhibit "A" to the defendants' answer, and attach it to the record as "Defendants' Exhibit No. 66," and then return the original to me.

(Same objection, waiving objection to a copy being substituted in lieu of the original.)

(Patent No. 18 is marked "Defendants' Exhibit No. 66." See stipulation on page 28 of this record.)

Mr. SINGER.—I will offer in evidence patent No. 23, issued by the United Staes to the Southern Pacific Railroad Company, dated November 5th, 1892, and ask the examiner to copy so much of it as conveys lands involved in this suit, but not described on Exhibit "A" to the defendants' answer, and attach it to the record as "Defendants' Exhibit No. 67," and then return the original to me.

(Same objection, waiving objection to a copy being substituted in lieu of the original.)

(Patent No. 23 is marked "Defendants' Exhibit No. 67." See stipulation on page 28 of this record.)

Mr. SINGER.—I will offer in evidence patent No. 25, issued by the United States to the Southern Pacific Railroad Company, dated August 15th, 1894, and ask the examiner to copy so much of it as conveys lands involved in this suit, but not described on Exhibit "A" to the defendants' answer, and attach it to the record as "Defendants' Exhibit No. 68," and then return the original to me.

(Same objection, waiving objection to a copy being substituted in lieu of the original.)

(Patent No. 25 is marked "Defendants' Exhibit No. 68." See stipulation on page 28 of this record.)

Mr. SINGER.—I will offer in evidence patent No. 27, issued by the United States to the Southern Pacific Rail-

road Company, dated November 28th, 1894, and ask the examiner to copy so much of it as conveys lands involved in this suit, but not described on Exhibit "A" to the defendants' answer, and attach it to the record as "Defendants' Exhibit No. 69," and then return the original to me.

(Same objection, waiving objection to a copy being substituted in lieu of the original.)

(Patent No. 27 is marked "Defendants' Exhibit No. 69." See stipulation on page 28 of this record.)

Mr. SINGER.—I will offer in evidence patent No. 28, issued by the United States to the Southern Pacific Railroad Company, dated December 22d, 1894, and ask the examiner to copy so much of it as conveys lands involved in this suit, but not described on Exhibit "A" to defendants' answer, and attach it to the record as "Defendants' Exhibit No. 70," and then return the original to me.

(Same objection, waiving objection to a copy being substituted in lieu of the original.)

(Patent No. 28 is marked "Defendants' Exhibit No. 70." See stipulation on page 28 of this record.)

Mr. SINGER.—I will offer in evidence patent No. 29, issued by the United States to the Southern Pacific Railroad Company, dated October 9th, 1895, and ask the examiner to copy so much of it as conveys lands involved in this suit, but not described on Exhibit "A" to the defendants' answer, and attach it to the record as "Defendants' Exhibit No. 71," and then return the original to me.

(Same objection, waiving objection to a copy being substituted in lieu of the original.)

(Patent No. 29 is marked "Defendants' Exhibit No. 71." See stipulation on page 28 of this record.)

Mr. SINGER.—I will offer in evidence patent No. 30, issued by the United States to the Southern Pacific Railroad Company, dated January 20th, 1896, and ask the examiner to copy so much of it as conveys lands involved in this suit, but not described on Exhibit "A" to the defendants' answer, and attach it to the record as "Defendants' Exhibit No. 72," and then return the original to me.

(Same objection, waiving objection to a copy being substituted in lieu of the original.)

(Patent No. 30 is marked "Defendants Exhibit No. 72." See stipulation on page 28 of this record.)

Mr. SINGER.—I will offer in evidence patent No. 31, issued by the United States to the Southern Pacific Railroad Company, dated February 12th, 1896, and ask the examiner to copy so much of it as conveys lands involved in this suit, but not described on Exhibit "A" to the defendants' answer, and attach it to the record as "Defendants' Exhibit No. 73," and then return the original to me.

(Same objection, waiving objection to a copy being substituted in lieu of the original.)

(Patent No. 31 is marked "Defendants' Exhibit No. 73." See stipulation on page 28 of this record.)

Mr. SINGER.—I will offer in evidence patent No. 32, issued by the United Staes to the Southern Pacific Railroad Company, dated May 7th, 1896, and ask the examiner to copy so much of it as conveys lands involved in this suit, but not described on Exhibit "A" to the defendants' answer, and attach it to the record as "Defendants' Exhibit No. 74," and then return the original to me.

(Same objection, waiving objection to a copy being substituted in lieu of the original.)

(Patent No. 32 is marked "Defendants' Exhibit No. 74." See stipulation on page 28 of this record.)

Mr. SINGER.—I will offer in evidence patent No. 33, issued by the United States to the Southern Pacific Railroad Company, dated June 22d, 1896, and ask the examiner to copy so much of it as conveys lands involved in this suit, but not described on Exhibit "A" to the defendants' answer, and attach it to the record as "Defendants' Exhibit No. 75," and then return the original to me.

(Same objection, waiving objection to a copy being substituted in lieu of the original.)

(Patent No. 33 is marked "Defendants' Exhibit No. 75." See stipulation on page 28 of this record.)

(It is stipulated that the persons named in Exhibit "A," attached to the answer, as having purchased or contracted to purchase lands therein described, not patented to the defendant railroad company, would, if produced as witnesses, testify that such purchases, or contracts to purchase, were made at the times severally therein stated, and according to the terms of the contract shown in form of contract marked "Defendants' Exhibit 47," or deed marked "Defendants' Exhibit 48," as the case may be, and as shown by said Exhibit "A" attached to the answer; and would further testify that such purchases or contracts to purchase were made in good faith and without notice of any invalidity of title, except that conveyed by the public laws and records, and that notice, if any, conveyed by the terms of said contracts and deeds; and that the sums of money shown by said Exhibit "A"

attached to the answer to have been paid were in fact paid at the times severally shown therein.)

(And it is further stipulated that such evidence may be deemed to be before the Court in this case, subject to all objections as to its competency, materiality, and relevancy.)

(The further taking of testimony before the examiner was thereupon continued, by consent of counsel, until Thursday, January 13th, 1898, at the hour of 1:30 o'clock P. M.)

San Francisco, January 13th, 1898.

(By consent of counsel, the taking of testimony herein was this day continued until Friday, January 14th, 1898, at the hour of 9:30 o'clock A. M.)

San Francisco, January 14th, 1898.

Testimony of JEROME MADDEN (continued).

Mr. SINGER.—Q. Mr. Madden, what is this statement which I now hand you? (Document shown witness.)

(Same objection.)

A. This is a statement that was made under my direction of all the lands in this case patented to the Southern Pacific Railroad Company and unsold on July 23d, 1896; it consists of six and a half pages, and represents 107,419 38-100 acres.

Q. Have you checked and compared the list with the patents and the records of your office, so as to know whether it is correct or not?

(Same objection.)

A. It has been very carefuly checked and compared, and it is absolutely correct.

Mr. CALL.—Q. This list, or table, which you have here, contains a description of the lands, the number of acres in each tract, the number of the patent, and date of the patent, does it not? A. It does.

Mr. SINGER.—I will now hand the examiner the statement about which Mr. Madden has just testified, and ask that he compare it with the patents exhibited, and, if found to be correct, that this statement be substituted in evidence for the patents mentioned upon it, and that, in lieu of copying the portions of the patents conveying the lands described upon the statement that the statement be accepted as evidence, after having been certified by the examiner.

Mr. CALL.—I will consent that the statement may be compared by the examiner, and, if found to be correct, to be certified as correct by the examiner, and that then the statement may be substituted in lieu of the patents, with the same effect as if the patents themselves were introduced in evidence, subject to objections as to relevancy and materiality.

(The statement referred to, bearing the heading "Land Department, So. Pac. R. R. Co. Case 675, U. S. vs. S. P. R. R. Co. Texas Pacific Overlap Suit. Statement showing lands in above suit, outside of the Atlantic & Pacific R. R. Grant, patented to the Southern Pacific Railroad Co., and unsold on July 23, 1896," is marked "Defendants' Exhibit 76," and is annexed hereto, together with the certificate of the examiner.)

JEROME MADDEN.

Testimony of W. H. H. HART.

W. H. H. HART, called as a witness on behalf of the defendants, being first duly sworn, testified as follows, on January 12th, 1898:

Mr. SINGER.—Where do you reside?

A. In the city and county of San Francisco.

Q. You are the attorney for the defendant Colorado River Irrigation Company, are you not?

A. Yes, sir.

Q. Are you familiar with the terms of contract No. 11,322 issued by the Southern Pacific Railroad Company to the Colorado River Irrigation Company on December 8th, 1893? A. Yes, sir.

Q. I will state to you that contract is in evidence. Are you familiar with the expenditures made by the irrigation company upon the lands of that contract?

Mr. CALL.—I would like to interpose a general objection. Objected to as incompetent, immaterial, and irrelevant, and because the lands are not included in any grant to the Southern Pacific Railroad Company.

A. Upon them and those contiguous and adjacent thereto, yes.

Mr. SINGER.—Q. What is the nature of the expenditures made by the company, and the cost thereof?

(Same objection.)

A. Their nature consists of the purchase of a heading for a canal above Yuma, the prolongation of the surveys from there down to the international line between Mexico and the United States, the prolongation

of that line over the delta of the Hardy Colorado lying between the Colorado river and the Hardy Colorado, following the contour lines of gravitation, and prolonging that line on the contour of the country back into California, and along and through these lands up to a point called Flowing Wells, then across the railroad to the northeast side thereof, following the contour of the country to a point a short distance south of Las Palmas, which surveys were very carefully marked upon the ground, so far as I examined them, which was about one-half of the way, but not continuous; and also consists of the securing of a town site and power plant one mile north of the international line, where the surveys were made and completed for a water power, a drop of twenty-two feet, and at the heading of this canal there has been expended in the neighborhood of $21,000 in excavation, and the survey above the international line opposite Yuma passes through a portion of the Indian reservation, and considerable grading has been done, the total grading, so far as comes within my knowledge, amounting to a little over $21,000; the total surveys and expenditures in locating the canals in Mexico and in the State of California and securing the headings and right of way cost in the neighborhood of $167,000 in actual money.

Q. What are the purposes of these surveys and expenditures?

(Same objection.)

A. For the purpose of locating, excavating, and operating a canal for the purpose of conveying water from

the Colorado river upon other lands, and especially upon these lands, which water, by reason of the contour of the country, has to be taken out of the Colorado river above Yuma, and then carried by canal into Mexico, and back again into the United States, in order to get around the sand dunes and hills that lie between the Salton Sea country and the Hardy Colorado and the Colorado in California, and in no other way can these lands be improved or water secured for their outlet for settlement.

Q. Are the lands of this contract of a highly cultivatable character?

(Same objection.)

A. With water, yes; without water, no.

Q. Do you think of anything else you would like to say in connection with the claims of the irrigation company?

(Same objection.)

A. Simply this: that the irrigation company is prepared to go ahead with its work; that much litigation pending among themselves has been settled and compromised and adjusted, and that they are desirous of going on and completing this contract as soon as the title can be perfected and litigated.

Q. Is the company prepared to pay the purchase price provided for in the contract mentioned, and execute it upon the perfection of the Southern Pacific's title?

(Same objection.)

A. Yes, sir, without question. I will also state that the company has gone to a great expense in diplomacy and negotiations with the Mexican government in order

to obtain the permit to bring the water back again into California after it went over into Mexico, in order to cover these lands; and that without a community of action on the part of the two governments these lands could not be irrigated, and that this company has accomplished that result, and at a great deal of expense. Another thing I want to say is that at no other place on the Colorado river below where this canal was located can a ditch be taken out, for the reason that it is a sandy and a movable, decomposing cement chalk, but where the heading of this canal is located it is taken out of solid rock, and the head has already been prepared for the receiving of the water to be carried along as far as the canal can be completed, and on account of this suit, as well as the depression of the times, has been the cause of the delay.

Q. Did you conduct the purchase on behalf of the irrigation company?

(Same objection.)

A. Yes, sir; I represented the irrigation company in obtaining this contract from the Southern Pacific Railroad Company, and at that time we supposed that they had a right to make the contract, and we contracted believing that to be the case.

Q. At that time you had no knowledge of any adverse claim of the United States as to the Southern Pacific grant?

(Same objection.)

A. No actual knowledge; we had knowledge, perhaps, of the laws, but we supposed—at least, I did—that there was no question about it.

Q. The Colorado River Irrigation Company is an American corporation, is it not?

(Same objection.)

A. It is a corporation, yes, sir, created under the laws of the State of Colorado.

Q. You may state whether or not the contract as entered into on the part of this company was a genuine transaction in good faith, believing in the Southern Pacific Railroad Company's title by its grant to those lands?

(Same objection.)

A. Yes, sir; and we have obtained subscription for stock which will give us the incurring of an obligation of $1,347,000 to complete the canal with a view of covering these identical lands, which would not have been undertaken if it had not been for this company.

Q. You spoke of the irrigation system as also contemplating other lands. To what extent does it contemplate lands not subject to this contract?

(Same objection.)

A. Only the lands that lie below it and necessarily covered by the canal, if it had been built for these lands at all; in other words, it is not built for other lands, but especially for this land, and the other is simply an incident from the fact that they lie below the canal.

Q. Does your corporation own the other lands that you speak of?

(Same objection.)

A. In the Indian reservation, no. The Indian reservation, at our instance, was thrown open to sale and settlement, but we did not own the lands. The lands in

Mexico were the lands which were originally known, and are still known, as the Blythe concession lands, but the title is imperfect, and the canal was not built for the purpose of supplying those lands, but for the purpose of supplying these lands in this contract.

Q. About what area, generally speaking, does your corporation own legal or equitable rights to beyond the area of the contract mentioned?

(Same objection.)

A. Do you mean for water or for lands?

Q. Lands?

(Same objection.)

A. 320 acres of land at the heading of the canal, which was purchased for the purpose of the canal, and the school sections through which the canal run, but no others.

Q. Is there anything else you desire to state in connection with this matter?

(Same objection.)

A. I will state that unless the company could secure these lands and the fulfillment of the title it seems to me it would be a useless expedient to complete the construction of the canal, unless the title is secured by persons who would pay for water rights; in other words, the entering into this contract and these lands were and are the objective point of the irrigation scheme, and the lands lying between these lands and the Hardy Colorado which lie below the canal are simply there as a matter of incident by reason of the contour of the country, and will only be watered in the event that proper arrangements

could be made with the parties below; in other words, the canal was located and surveyed, and, so far as the work is done, was built for the purposes of these lands.

Cross-Examination.

Mr. CALL.—Q. Are you interested in the Colorado River Irrigation Company as a stockholder?

A. I am not.

Q. Have you been interested as a stockholder at all?

A. I never was.

Q. Who are the stockholders of the company?

A. John C. Beatty, who at the time was a resident of Denver; Mr. Dow, who was a banker of Denver; Mr. Miller, a banker of Denver—not the one that was convicted there a few months ago, but the other Miller; W. H. Beatty of Toronto, Canada; and several people in New York, and especially in Providence, Rhode Island, a large number of stockholders there, I forget their names. Ex-Sargeant Barnes of the Senate was largely interested.

Q. Do you remember who constituted the board of directors of the company at the time this contract was made?

A. John C. Beatty, W. H. Beatty, Frank Miller, John Stanton, I think is his name. He was president of the Metropolitan Bank and vice-president and director in the bank that General James is the president of—the Park National Bank, or some such name.

Q. Where is the principal place of business of the company?

A. The principal place of business is Denver, Colorado.

Q. Does the company keep an office there?

A. It did the last that I knew of; under their by-laws and their articles of incorporation they have a right to open a branch office, an executive office, where the stockholders could meet in special meetings, and where the directors could meet and do business, in New York. There is one in Providence, Rhode Island. The last office I knew of in New York was 9 and 10 Broad street, in what is known as the Corn Exchange Building, I think it is.

Q. What steps were taken by the company to secure a right of way for the canal?

A. By an act of Congress?

Q. An act of Congress authorizing the construction of the canal?

A. Of the canal, and giving them the right of way through the government lands and Indian reservation.

Q. Generally?

A. That is the way I understand it.

Q. When did this company make this survey of the canal?

A. They were some three years at the work.

Q. When did they commence the work?

A. They commenced the work, I think about in 1892, or the early part of 1893. I spoke to Mr. Huntington in New York about giving this contract, I think in May, 1893, and they had commenced the survey a short time previous to that, and after my conversation with Mr. C. P. Huntington he stated that he would grant a contract,

and that the matter should be settled by Mr. Madden—the form of it should be settled by Mr. Madden, Mr. Herrin, and myself; that was afterward done and consummated in the contract which bears date the 8th day of December, 1893.

Q. When was the right of way act passed by Congress? A. I cannot give you that.

Q. Can you state how much of the work was done prior to the date of that contract?

A. Simply a preliminary survey, if I understand it correctly, within the portion of California that lies between the international line and the heading of the canal and east of the mountain range.

Q. What proportion of the land subject to irrigation from the canal as proposed lies in the United States, and what proportion in Mexico?

A. The proportion of lands which are subject to irrigation of the canal completed would be practically as surveyed and as marked on Exhibit "A" to the contract, if you will permit me to refer to that.

Q. Certainly.

A. And I should judge that at least calculation three-fourths of the lands subject to irrigation under that survey lie within the State of California. I will also state that at that time I was attorney-general of the State of California, and when the controversy arose with the Mexican government in reference to bringing the water back into California that the Mexican government refused at first to permit that to be done, according to the information that I obtained.

Q. What year was that?

A. That was in 1892. I then informed this corporation and the land brokers in the northern part of Lower California that if the canal was not permitted to return back into California, to bring the water back into California, that I, as attorney-general of the State, should bring a suit prohibiting them from constructing the canal and taking the water out of the Colorado river and carrying it down into Mexico, as I contended that the waters of the Colorado river lying north of the international line belonged, one-half to California, and one-half to Arizona, and that if they could not take those waters out and bring them back into California I should not permit them to be taken out and carried into Mexico unless they were brought back, and it was upon that opinion that I gave upon that subject that caused the Mexican government to recede from their original proposition. That was in 1892, and up to that time, and up to the time that I talked to Mr. Huntington, nothing but preliminary work in the survey had been done.

Q. What time did you cease work on the canal?

A. The last work that was done was I think about six weeks after this suit was brought. I then advised the corporation that I would not expend any greater sum of money on the canal until this suit was withdrawn, except to do enough work to hold the water right, and I believe that this has been done continuously ever since, according to my information, but that I cannot testify to of my own knowledge; the last work I personally know of being

done on the canal, of my own ocular knowledge, was in February, 1896.

Q. State, if you can, of your own knowledge, how much money was paid out by the Colorado River Irrigation Company on this work prior to the commencement of this suit?

A. According to my information about—that is, on the actual excavation, you mean?

Q. On any work or expenditures connected with the property?

A. $167,000.

Q. Prior to the commencement of this suit?

A. Yes, sir; and there has been some paid—but I have not included that in my estimate; I think it is a fraction over $167,000.

Q. What was that paid for? For what different items?

A. For surveys, preliminary and permanent surveys, the platting, the staking, for purchasing the heading for the canal, securing the title to it, and excavating.

Q. Do you remember how much was paid out for the headworks?

A. They paid out and agreed to pay $15,000; I owned that land myself, and that is what I charged for the heading.

Q. What did they in fact pay prior to the commencement of this suit?

A. They have paid about $3,000, and I have a judgment for the balance.

Q. How much did they pay out for surveys prior to the commencement of the suit?

A. I cannot tell you exactly, for this reason, that I looked over the accounts of the company and I found that the amounts expended in actual labor and work, including the survey, was $167,000 and some odd hundred dollars; that included the $3,000 paid on account of the heading, and the expenses of excavating, and the surveys preliminary and permanent, and I also believe it included $500, or such a matter, paid to me as expenses toward seeing Mr. Huntington, that is my recollection.

Q. You paid nothing down on the contract when you made it?

A. That I cannot say, because when it was actually signed I was not present.

Q. It does not show, I believe.

A. I know that the contract also provided for a right of way for the railroad, that part of the proposition I believe was to be free, as I understood it, to Mr. Huntington; I have forgotten what the contract said about it, if anything.

Q. Who is secretary of the Colorado River Irrigation Company? A. Peter McLean.

Q. Where is his office?

A. His office now at this present time is in Cleveland, Ohio.

Q. Does he keep the books and records of the company there?

A. I don't know whether he keeps them there or at Yuma; he is part of the time at Yuma, and part of the time at Cleveland; the company has an office at Yuma.

Redirect Examination.

Mr. SINGER.—Q. Is there anything else, Mr. Hart? (Same objection.)

A. In the statement I made as to the amount expended, that amount includes what has actually been spent in connection with the canal; it does not refer to salaries of officers or office rent in New York, or anything of that kind, and it represents actually twenty-dollar gold pieces, no commissions or anything else except $500 that was paid toward my expenses in going to see Mr. Huntington.

Mr. SINGER.—Mr. Call, will you agree to waive the signature of Mr. Hart to his deposition?

Mr. CALL.—Yes.

Testimony of CHARLES D. RHODES.

CHARLES D. RHODES, called as a witness on behalf of the defendants, being first duly sworn, testified as follows on January 14th, 1898:

Mr. SINGER.—Q. Where do you reside?

A. At 711 Jones street, San Francisco.

Q. What is your occupation?

A. I am chief draftsman in the United States surveyor-general's office.

Q. Here in San Francisco? A. Yes, sir.

Q. I submitted to you a list of townships through which the line of general route on the map filed by the Atlantic and Pacific Railroad Company in the general landoffice, in September, 1871, seemed to extend, and

asked you to make an examination of your records and ascertain which, if any, of those township plats had been officially approved prior to September 1st, 1871; did you make such an examination? A. Yes, sir.

Q. Will you please state which of the townships you find the official plat of to have been approved prior to September 1st, 1871?

A. Township 15 south, range 15 east, San Bernardino meridian; 15 south, 16 east, 15 south, 17 east; 15 south, 18 east; 15 south, 19 east; 15 south, 21 east; 16 south, 11 east; 16 south, 12 east; 16 south, 13 east; 16 south, 14 east; 16 south, 15 east; 16 south, 16 east; 17 south, 1 west; 17 south, 21 and 22 east; 18 south, 1 and 2 west; 18 south, 1 east.

Q. I also submitted to you a list of townships along the line of definite location and construction of the Southern Pacific branch line railroad through San Gorgonio Pass, and thence in a southwesterly direction to San Diego, and asked you to ascertain which, if any, of those townships the official plat of had been filed prior to the year 1873; did you make such examination?

A. Yes, sir.

Q. Will you please state which, if any, of those townships the official plat was filed on prior to the year 1873?

A. Township 1 south, ranges 3 and 5 west, San Bernardino meridian; township 2 south, 1, 2, and 6 west; township 3 south, 1, 2, and 5 west; township 3 south, 1, 2, 3, 4, and 5, east; township 4 south, 5 and 6 west; township 4 south, 5 and 6 east; township 5 south, 6, 7, and 8 east; township 6 south, 8 and 9 east; township 7

south, 8 and 9 east; township 8 south, 9, 10, and 11 east; township 9 south, 7 west; township 9 south, 11 and 12 east; township 10 south, 12, 13, and 14 east; township 11 south, 4 and 5 west; township 11 south, 14 and 15 east; township 12 south, 16 and 17 east; township 13 south, 17 and 18 east; township 14 south, 18 and 19 east; township 15 south, 19 and 20 east; township 16 south, 20, 21, and 22 east.

Q. In some instances the official plats you have mentioned did not cover the entire township?

A. No, sir.

Mr. CALL.—The testimony of this witness is objected to as irrelevant and immaterial.

Cross-Examination.

Mr. CALL.—Q. You say that some of the townships had only been partially surveyed at the times you mentioned? A. Yes, sir.

Q. Did you personally examine the plats yourself, so that you can state the whole or parts of the townships you have mentioned were surveyed at the time you stated?

A. I personally examined the maps, and I found that some were partially surveyed and some wholly surveyed.

Q. Is it not true, as a matter of fact, that the townships in the mountains were not any of them wholly surveyed in 1873?

A. I could not say whether they were wholly surveyed or not, any of them.

Q. In stating that the townships you have named were surveyed, or that plats were returned, what you meant

then was that there had been some survey lines run in those townships and plats and those survey lines had been returned? A. Yes, sir.

Q. Can you state which of the townships were wholly surveyed and which were surveyed only in part or exterior boundary lines run?

A. I cannot; not without further examination; all these township plats I have referred to have more or less public land in them, exclusive of the private grants; they all have some public land.

Mr. SINGER.—Will you excuse the signature of this witness?

Mr. CALL.—Yes, sir.

San Francisco, January 15th, 1898.

Testimony of WILLIAM HOOD.

WILLIAM HOOD, called as a witness on behalf of the defendants, being first duly sworn, testified as follows:

Mr. SINGER.—Q. Where do you reside?

A. In San Francisco, California.

Q. What is your profession and occupation?

A. Civil engineer; at present chief engineer of the Southern Pacific Company and leased lines.

Q. Are you a diploma graduate of any institute?

A. Dartmouth College.

Q. How long have you been engaged as a civil engineer in railroad building?

A. Since early in May, 1867.

Q. What railroads have been built under your direction?

A. Partially under my direction and wholly under my direction in various capacities as assistant engineer and instrument man and chief assistant engineer, and chief engineer, the greater share of the railroads of this company, this being quite general; some portions of the system were built with me having so little to do with them that I did not ever see them till after the track was laid, but in general I have done a great deal of work.

Q. It may be said generally, may it not, that you have in those different capacities constructed most of the railroads in California?

A. Yes, sir; had to do with the construction of most of the railroads in California would be correct.

Q. For how many years have you been thus engaged?

A. Almost continuously since May, 1867, with very few breaks.

Q. Was the route of the Southern Pacific Company's branch line road extending from Mojave to Yuma surveyed under your direction?

A. A portion of it—a considerable portion of it.

Q. Are you familiar with the features of the eligibility of the Southern Pacific Company's branch line road for its entire length? A. Quite so.

Q. Are you familiar with the country lying between the western end of San Gorgonio Pass and San Diego?

A. Yes, to a considerable extent. For instance, in the summer of 1877, I think, I explored every pass, or low divide, in the range which lies between the Colorado desert and the Pacific ocean, commencing with Warner's Pass—and I commenced at Warner's Pass because I was

already very familiar with San Gorgonio Pass—and thence to the Mexican boundary; and there is no part of the axis of that range that I have not set foot on, either my foot or my horse's foot.

Q. You are, therefore, in a general way at least, familiar with the eligibility of the railroad route from Yuma to San Diego by way of San Gorgonio Pass, as well as by way of any other routes that exist between San Diego and Yuma?

Mr. CALL.—Question objected to as incompetent, immaterial, and irrelevant.

A. Yes, sir; in a general way.

Mr. SINGER.—Q. Is there, in your opinion, a feasible railroad route from Yuma in a general direct westerly course to San Diego?

(Same objection.)

A. There is.

Q. Were the question to be presented to you now as an original proposition as to the most eligible railroad route from Yuma to San Diego, what would your answer be?

(Same objection.)

A. It would be this: To proceed by a reasonably direct line to a point on the east slopes of the range which lies between the Colorado desert and the Pacific ocean, which foot of grade would be about where the maximum grades would strike if run nearly continuously from the southwestern end of the gorge known as the Carriso canyon; thence with grades of not always continuously maximum ascending rate to the summit of the divide be-

tween the waters which flow through creeks of sundry names into the Carriso canyon and the waters which flow toward the Pacific ocean, these waters flowing toward the Pacific ocean being at that point tributary to the Tia Juana creek; I don't remember at this date the exact names of the sundry small forks of what is really the Carriso creek and the Tia Juana creek; then at the appropriate point striking into the waters tributary to the Otay river, and thence down to the vicinity of the Pacific ocean; thence by suitable and somewhat favorable route to San Diego; this being a very general description of the land.

Q. Several days ago I submitted to you a carbon copy of the deposition of Mr. Charles E. Satterlee, taken in this case on behalf of the United States before William Herbert Smith, as special examiner, in New York, executed on November 17th, 1896, and asked you to examine the reports of surveys given by him. I will now ask you to say, from your examination of Mr. Satterlee's deposition mentioned, which route therein considered is shown to be the most eligible and practicable route for a railroad from Yuma to San Diego, and I will ask you to run out fully the reasons for whatsoever conclusions you have reached.

(Same objection.)

A. In looking over the report offered in evidence by Mr. Joseph H. Call in the deposition of Mr. Satterlee, being from the printed report to Gen. C. M. Dodge, chief engineer Texas and Pacific Railroad by James A. Evans, engineer California Division, dated San Diego, Cal., February 3d, 1873, I have been struck by the estimates of cost

of the various routes, particularly by the prices of various classes of work being placed very much higher than such work costs in my experience, and also by the unusual manner of comparing routes in regard to their curvatures and gradients.

The following estimates of cost of routes are made by taking the quantities of each class of work from the above-mentioned report as being correct, and applying to these quantities such prices as the work could be readily contracted to be done for.

From the following estimates of cost of the two routes with prices for which the work could be done, it is seen that the line A or direct route would cost but $2,373,150.86 more than line D or San Gorgonio Pass route.

The difference of cost shown by report of James A. Evans before referred to is $6,143,854.24, and had still higher prices been used in this report for the quantities of work to be done on the two routes, almost any increased difference of cost could have been shown.

Line A—Direct Route.

Estimate of Cost Section No. 1. From Depot Grounds to Station 908+70, Foot of Grade in Otay Valley.

Distance, 26.8-10 miles.

541,464 cubic yards earth excavation at.....	$	.15	$ 81,219.60
53,000 " " loos rock " "		.35	18,550.00
53,000 " " solid rock " "		.85	45,050.00
1,600 lineal feet timber lined tunnel "		70.00	112,000.00
525 cubic yards rubble masonry "		7.00	3,675.00
995,747 ft. B. M. timber trestle "		23.00	22,902.18
40,284 lineal feet redwood piling "		.24	9,668.16
28,070 lbs. wrought-iron bolts "		.02	651.40
19,746 lbs. cast-iron washers "		.017	335.68
26.8-10 miles 75-lb. steel main line track, tie plated, and with one mile of siding laid with 50-lb. steel for each 4.36 miles of main line track, all in place and ballasted, at.....	$10,600.00		284,080.00
Total, 26.8-10 miles at $21,568.73 per mile.....			$578,042.02

Line A—Direct Route.

Section No. 2. From Station 908+70, Foot of Heavy Grade, to Station 4,300 in the Carriso Canyon.

Distance 81.57 Miles.

2,970,736	cubic yards earth excavation at.....	$ .20	$ 594,147.20
943,320	" " loose rock excavation.....	.375	353,745 00
220,000	" " solid rock "	.70	154,000.00
1,907,903	" " " " "	.90	1,717,112.70
9,255	lineal feet timber lined tunnel.....	60.00	555,300.00
6,156	cu. yards coursed masonry.....	12.80	78,796.80
21,830	" " rubble masonry.....	8.00	174,640.00
600	lin. ft. truss bridging	38.00	22,800.00
1,055,967	ft. B. M. timber trestle.....	23.00	102,287.24
111,892	lbs. wrought-iron bolts.....	.02	2,237.84
154,012	" cast-iron washers.....	.017	2,618.20
81.57	miles 75-lb. steel main line track, tie plated and with one mile of siding laid with 50-lb. steel for each 4.36-100 miles of main line track, all in place and ballasted, at	$10,600.00	864,642.00
	Total, 81.57-100 miles at $57,402.56 per mile.....		$4,682,326.98

Line A—Direct Route.

Section No. 8 from Station 4,300 in Carriso Canyon to Station 5,300 on the Desert.

Distance, 18.94 Miles.

1,339,850	cu. yds.	earth excavation at.....	$ .14	$187,579.00
96,073	"	loose rock excavation at.....	.35	33,625.55
692	"	coursed masonry "	12 00	8,857.60
5,092	"	rubble masonry "	8 00	40,736.00
962,228	ft. B. M.	timber trestle "	23 00	22,131.24
18,106	lbs.	wrought-iron bolts "	.02	362.12
22,722	"	cast-iron washers "	.017	386.27
18.94	miles	75-lb. steel main line track, tie plated and with one mile of siding laid with 50-lb. steel for each 4.36-100 miles of main line track, all in place and ballasted, at.....	$10,600.00	200,764.00
Total, 18.94 miles at $26,105.69 per mile.....				$494,441.78

Line A—Direct Route.

Section No. 4 from Station 5,300 to Colorado River at Fort Yuma.

Distance, 75.8 Miles.

1,094,215 cubic yards earth excavation at	$	.12	$131,305.80
62 " " rubble masonry "		8.00	496.00
415,676 feet, B. M., timber trestle, "		23.00	9,560.55
8,376 lineal feet redwood piling "		.24	2,010.24
10,888 pounds wrought-iron bolts "		.02	217.76
5,098 pounds cast-iron washers "		.017	86.67
78.8 miles 75-lb. steel main line tracks, tie plated and with one mile of siding laid with 50-lb. steel for each 4.36 miles of main line track, all in place and ballasted, at		$10,500.00	$793,900.00
Total, 75.8 miles at $12,395.48 per mile			$939,577.02

Summary of Cost.

Section No. 1	26.8	miles,	$ 578,042.02
" " 2	81.57	"	4,682,326.98
" " 3	18.94	"	494,441.78
" " 4	75.8	"	939,577.02
Total 203.11 miles at $32,959.42 per mile			$6,694,387.80

Total rise East ..... 4,580.8-10 feet.
" " West ..... 4,452.1-10 "
" curvature ..... 17,864 degrees.

Line A—Direct Route.

	Ascending Grade Eastward. Miles.	Descending Grade Eastward. Miles.	Level Grade. Miles.
Level grade			44.39
Level to 20 ft. per mile	35.29	12.39	
20 to 40 feet per mile	14.21	8.23	
40 to 60 " " "	9.67	2.02	
60 to 80 " " "	6.36	13.32	
80 to 105 " " "	16.86	28.64	
116 ft. per mile	11.68		
Totals, 203.11-100 m.	94.07	64.65	44.39

These grades may be segregated into

Level to 60 ft. per mile	126.25	miles.
60 to 110 ft. per mile	76.86	"
Total	203.11	miles.

Line D—San Gorgonio Pass Route.

Estimate of Cost—Section No. 1. From Depot Grounds via the Coast to Head of Temecula Canyon.

Distance 67.08 Miles.

1,812,195 cubic yards earth excavation at.....	$	.20	$362,439.00
165,689 " " solid rock " "		.90	149,120.10
677 lineal feet timber lined tunnel at		60.00	40,620.00
2,900 cubic yards coursed masonry "		12.80	37,120.00
2,932 " " rubble masonry "		8.00	23,456.00
15,000 " " riprap "		1.25	18,750.00
2,250 lineal feet truss bridging "		38.00	85,500.00
77,714 lineal feet redwood piling "		.24	18,651.36
2,356,908 ft. B. M. timber trestle "		23.00	54,208.88
74,749 lbs. wrought-iron bolts "		.02	1,494.98
46,434 lbs. cast-iron washers "		.017	789.38
67.8-100 miles 75-lb. steel main line track, tie plated, with one mile of siding laid with 50-lb. steel for every 4.36 miles of main line track, all in place, ballasted, at.....		10,600.00	711,048.00
Total, 67.08 miles at $22,409.03 per mile.....			$1,503,197.70

Line D—San Gorgonio Pass Route.

Section No. 2. Head of Temecula Canyon to San Gorgonio Pass.

Distance 39.98 Miles.

839,381 cubic yards earth excavation at.....	$	.20	$167,875.20
95,968 " " loose rock " "		.35	33,588.80
191,939 " " solid rock " "		.70	134,357.30
542 lineal feet timber lined tunnel at.....		60.00	32,520.00
2,724 cubic yards coursed masonry at.....		12.80	34,867.20
2,574 " " rubble masonry "		8.00	20,592.00
350 lineal feet truss bridges "		38.00	13,300.00
1,204,000 ft. B. M. timber trestle "		23.00	27,692.00
24,623 lbs. wrought-iron bolts "		.02	492.46
17,660 lbs. cast-iron washers "		.017	300.22
39.98 miles 75-lb. steel main line track, tie plated, with one mile of siding laid with 50-lb. steel for every 4.36 miles of main line track, all in place and ballasted, at.....		10,600.00	423,788.00
Total, 39.98 miles at $22,245.48 per mile.....			$889,374.18

Line D—San Gorgonio Pass Route.

Section No. 3—San Gorgonio Pass to Fort Yuma.

Distance 163.28 miles.

880,598 cubic yards earth excavation at.....	$	.15	$ 132,089.70
51,000 " " loose rock " "		.35	17,850.00
21,000 " " solid rock " "		.90	18,900.00
1,320 " " rubble masonry "		8.00	10,560.00
4,800 " " riprap "		1.25	6,000.00
53,650 lineal feet redwood piling "		.24	12,876.00
668,078 ft. B. M. timber trestle "		23.00	15,365.79
20,810 lbs. wrought-iron bolts "		.02	416.20
9,845 lbs. cast-iron washers "		.017	167.37
163.28 miles 75-lb. steel main line track, tie plated, with one mile of siding laid with 50-lb. steel for every 4.36 miles of main line track, all in place, ballasted, at.....		$10,500.00	1,714,440.00
Total, 163.28 miles at $11,812.01 per mile.....			$1,928,665.06

Summary of Cost.

Section No. 1.....	67.08 miles.....	$1,503,197.70
" No. 2.....	39.98 "	889,374.18
" No. 3.....	163.28 "	1,928,665.06
Total.....	270.34 miles at $15,984.45 per mile,	$4,321,236.94
Total rise east.....		4,138.7 feet.
" " west.....		3,995.9 feet.
Total curvature.....		6,354 degrees.

Line D—San Gorgonio Pass Route.

	Ascending Grades Eastward Miles.	Descending Grades Eastward Miles.	Level Grade Miles.
Level grade			41.02
Level to 20 feet per mile	63.26	43.65	
20 to 40 feet per mile	32.27	20.30	
40 to 60 feet per mile	10.20	13.85	
60 to 80 feet per mile	7.73	9.62	
80 to 105 " " "	13.79	14.65	
Total, 270.34 miles	127.25	102.07	41.02

These grades may be segregated into

Level to 60 feet per mile	224.55	miles.
60 to 105 feet per mile	45.79	"
Total	270.34	miles.

(1931)

Comparison of Line A, Direct Route, and Line D, San Gorgonio Pass route.

	Line A.	Line D.	Differences in favor of Line A.	Differences in favor of Line D.
Distance, miles	203.11	270.34	67.23	
Average rise east and west in feet,	4516.5	4067.3		449.2
Grades level to 60 ft. per mile—miles,	126.25	224.55	98.30	
Grades 60 feet to 116 ft. per miles—miles	76.86	45.79		31.07
Curvature, degrees	17864.	6354.		11510.
Cost per mile	$32,959.42	$15,984.45		$16,974.97
Total cost	$6,694,387.80	$4,321,236.94	$2,373,150.86	

For comparing the direct route and the San Gorgonio Pass route there is no certain method, it being dependent largely on the volume and character of the traffic.

A common rule of thumb method is to assume a degree of curvature as equivalent in its effect on cost of operating to four feet of length of road, and to consider a foot of rise of grade as equivalent in its effect on cost of operating to 44 feet of length of level road for grades of less than 60 feet per mile and as equivalent to 60 feet of length of level road for grades from 60 to 116 feet per mile.

On this basis the line A or direct route is affected as follows, assuming all the difference in rise and fall between the two routes to be made up of grades steeper than 60 feet per mile.

Line A, direct route, actual length.....	203.11 miles
Difference in grade rise and fall 449.2-10 feet at 60 feet horizontal per foot vertical is 26,952 feet or.....	5.15 miles
Difference in curvature is 11,510 degrees, at 4 feet horizontal per degree is 46,040 feet, or.....	8.72 miles
Making total length of line A or direct route, as compared with line D or San Gorgonio Pass route, as to cost of operating	
	216,98 miles

The length of line D or San Gorgonio Pass route is 270.34-100 miles. Hence, line A or direct route is in

effect as to cost of operating 53.36-100 miles shorter than line D or San Gorgonio Pass route.

This method of comparing the routes is quite approximate, but is much more nearly correct than the method of comparing routes by reducing their gradients and curvatures to equivalent level and straight distance on the basis of the expenditure of power required to haul trainson level versus ascending grades of sundry rates per mile, especially when such comparisons are based on the power of small and light locomotives, as the method not only ignores the fact that the cost of increasing power required for grades does not increase as fast as the increased expenditure of power, but also ignores the fact that the small locomotives are not appropriate and economical for use on steep grades. The method also assumes that all the cost of operating a railroad is proportional to the expenditure of power, when in fact a very large part of the cost of operations of a railroad is entirely independent of the expenditure of motive power per mile, be it more or less on sundry gradients.

The probable method of operation for either the direct route or the San Gorgonio Pass route would be to adjust the trainloads to what a suitable engine would haul on all grades of about 60 feet per mile or less, which grades exist here and there on both sides of the main summits of both routes, and for the intermediate or mountain gradient portion of each route haul the same trains by attaching a helping engine of suitable power. The additional cost of operating the mountain gradients and curvatures would then be the increased cost of the helping engine, and the cost of operating the increased curva-

tures on the mountain grades would be the cost of the increased wear on two engines, and on all the cars and on the track.

For this comparison it is necessary to determine, on each route, between what points such helping engines would be used, which would be determined by the most western and most eastern steep gradient rather than by the actual length of the successive portions of steep gradient added together, as the helping engines would be so used, regardless of portions of light or level gradient occurring between the portions of steep gradients.

For line A or the direct route it will be safe to assume the use of a helping engine on section No. 2 and No. 3, a distance of about 100 miles.

For line D or San Gorgonio Pass route the helping engines will have to be used from Santa Margarita valley, which is 57 miles from San Diego, to the head of the Colorado desert in Cabazon valley, which is 141.34 miles from Yuma.

Hence on line D it will be proper to assume the use of a helping engine for about 72 miles.

It is entirely improper to compare routes of this character reduced to straight and level distance, as they will never be operated on such a basis, the level portions being always interspersed with stretches of gradient from 50 to 60 feet per mile out of the mountains, which controls the adjustment of tonnage in trains.

For purposes of comparison, an average freight train with one locomotive may be assumed to be eighteen (18) cars on the grades of less than 60 feet to the mile, and all items of cost of operation can be omitted that are not

affected by length of road and distance on which a helping engine is required and the effect on operating cost of the curvature.

Considering one freight train on line A or direct route:

One locomotive, 203.11 miles at 30.74 cents.....	$62.44
One helping locomotive, 100 miles at 30.74 cents	30.74
18 cars at $.756 cents per mile, 13.608 cents for 203.11 miles	27.64
11,510 degrees extra curvature at $0.000828 per degree (train and two engines).....	9.53
449.2-10 feet extra average grade at $0.0005644 per foot, extra wear of track and train (with two engines) only...	0.25
Total relative cost one freight train, line A, direct route.....	$130.60

Considering one freight train on line D or San Gorgonio Pass route:

One locomotive, 270.34 miles at 30.74 cents.....	$83.10
One helping locomotive, 72 miles at 30.74 cents..	22.13
18 cars at .756 cts. per mile, 13.608 cts. for 270.34 miles.....	36.79
Track maintenance 67.23 extra miles at .35 cents	23.53
Extra wages on conductor and brakemen 67.23 miles, 67.23—135.17 of $9.00.....	4.48
Total relative cost one freight train, line D, San Gorgonio Pass route.....	$170.03

From the above it is seen that one freight train over the San Gorgonio Pass route will cost $39.43 more than over the direct route. Hence, it is evident that any

method of comparison of routes that is at all correct must show the line A or direct route to be not only shorter in actual distance, but in effect shorter judged by economy of operation.

If there were five trains daily each way between San Diego and Yuma, or ten trains daily over the road, the daily cost of train service would be $394.30 less by the direct route than via San Gorgonio Pass, or $143,919.50 per year. That is, with interest at five per cent a company could afford to expend $2,878,390.00 more in constructing the direct route than the San Gorgonio route, and the actual excess of cost is estimated to be but $2,373,150.86. If the traffic should ever amount to 10 trains each way daily, or 20 trains daily over the road, on the same basis a company could afford to expend $5,756,780.00 more in constructing the direct route than in constructing the San Gorgonio Pass route. And as the traffic at first would doubtless have been equal to five trains each way daily with probable increase from year to year, the reasons for adopting the A line or direct route would be very strong.

Q. Your conclusion from the report contained in the deposition, then, briefly stated, is that they show the Otay creek or direct line to be the shortest and most eligible route for a railroad from Yuma to San Diego?

(Same objection.)

A. Yes, sir; it does show it by all means.

Q. I will show you a map, certified on April 26, 1897, by Binger Hermann to be a true copy of the official map of California published by the department of the interior

for the year 1879, and ask you whether or not the Otay creek route referred to in the Satterlee deposition as "route A" is not substantially the route marked "Texas Pacific R. R." on that map. (Map shown witness.)

(Same objection.)

A. That would be substantially the route described as well as it could be delineated on a map of that scale and on a map of those imperfections.

Mr. SINGER.—I will introduce so much of that map as lies south of the third standard north San Bernardino meridian, together with the certificate on the map, and ask that it may be marked "Defendants' Exhibit No. 77."

Mr. CALL.—No objection to the offer of the map.

(Map labeled "Department of the Interior, General Landoffice, J. A. Williamson, Commissioner, State of California, 1879, compiled from the official records of the general landoffice and other sources by C. Roeser, principal draughtsman G. L. O.," together with the certificate of Binger Hermann, commissioner of the general landoffice, dated April 26th, 1897, attached thereto, and bearing the seal of the United States general landoffice, is marked "Defendants' Exhibit No. 77," and is annexed hereto.)

Cross-Examination.

Mr. CALL.—Q. Among the leased lines of the Southern Pacific Company is the Southern Pacific Railroad Company, is it not? A. Yes.

Q. And you are chief engineer of the Southern Pacific Railroad Company? A. Exactly.

Q. About how long have you been such chief engineer, or in the employ of the Southern Pacific Railroad Company?

A. I first became chief engineer of the Southern Pacific Railroad Company at the same time that I became chief engineer of the Southern Pacific Company; that gave ex officio the chief engineership of all leased lines—all lines leased and operated by the Southern Pacific Company. Before that I was chief engineer of the Central Pacific Railroad Company for a short time. Previous to that I was chief assistant engineer and assistant engineer at sundry times of both companies.

Q. The Central Pacific Railroad Company is also one of the leased lines of the Southern Pacific Company?

A. Yes, sir.

Q. Did you ever make a survey of the line of route which you have generally designated as the direct line, on or about line A shown on the map referred to between San Diego and Fort Yuma?

A. I never did; in the course of my general examinations of the country around Yuma I have been over what would be the route of that road from Yuma perhaps fifteen miles west, more or less, which would carry me to the open plain.

Q. West of what?

A. West of Yuma; which would carry me to the open plain which extends without any obstructions to the foot of the mountains between the desert and the Pacific ocean; and in 1877, the time I have spoken before of, I went over on the ground the line as then recently sur-

veyed for and reported back for the Texas and Pacific Railroad from the summit of the divide of the range before mentioned down through the various valleys and tributary streams of the Carriso to the Carriso canyon; I did not walk through the Carriso canyon; I then went to the summit again, and examined the general line of route and surveys for some miles to the westward of the summit, and between that point and San Diego I saw what of the country I could from the traveled stage road, which was nowhere any very great distance from the reported line of survey of the Texas Pacific. The reason that I could readily follow exactly the line of survey which was reported to have been recently made by the Texas Pacific was that the survey was recently made, and the stakes were new, and the bush cutting was new, could readily be found, and I examined it particularly and carefully, because it was the reported new and more favorable method of getting over that summit, which I understood the Texas Pacific had claimed in Congress a short time before to have discovered, which route they claimed made the direct route the most eligible route and the proper one to be considered in case the Texas Pacific should receive the subsidy and land grant which they were endeavoring to obtain.

Q. Do you say that of your own knowledge?

A. It is all from report, as I think I have stated. I qualify by saying that the survey was reported to have been made by the Texas Pacific.

Q. Have you been personally over the line from the summit to the point fifteen miles west of the Colorado river which you mentioned?

A. No, I have not, excepting, as I stated, from the summit to the head of the Carriso gorge, and not at all over the ground between that point and about fifteen miles west of Yuma.

Q. Have you ever made a survey of that part known as line D of the Texas Pacific line between the summit of San Gorgonio and San Diego?

A. I never have made an instrumental survey; I have simply been over portions of the route.

Q. In making your computation of cost and construction and operation of the San Gorgonio route as against the Carriso canyon route, did or did you not use, as a basis of computation of cost, the same figures that were given by the company in the report of General Dodge in the Satterlee deposition?

A. I used exactly the same figures as to quantities of earth work, timber work, piling and iron, and in every respect the same figures, excepting in tunneling; the tunneling I took in lineal feet, at so much a lineal foot, and I assumed that the tunnels would all require redwood timber lining, which Gen. Dodge's report did not assume, and I obtained the lineal feet of the tunneling on the direct or Carriso route by the lineal feet given in the report, as I found this corresponded about to the proper yardage of tunneling; on the San Gorgonio route, as there was no statement of the lengths of the individual tunnels in feet I deduced the lengths by the reverse process, calling for 12 cubic yards to a lineal foot, according to their estimates, and taking the corresponding number of lineal feet which in that case I assumed to require

timber lining, as I have never yet seen a tunnel in Southern California, or along the coast of California, no matter how favorably it looked on the outside, that did not require timber lining, with the one exception, I think, of a tunnel in sandstone near Port Costa.

Q. There is a greater number of timbered feet of tunneling on the Carriso line than on the San Gorgonio line?

A. Yes.

Q. Considerably more?

A. Considerably more; I could not say exactly how much without adding up my own figures.

Q. Is there any other element of difference in basis of computation?

A. Nothing at all, excepting that the prices which I applied to a cubic yard of earth work, rock work, or a thousand feet of timber in place, or other items of cost, are very different from those applied by Gen. Dodge, and very much less, and very close to what our work is costing us now in similar localities, and, if anything, a little less than we are paying.

Q. Then in estimating the cost of that work you used as a basis the present cost of work paid by your company?

A. Yes, sir; paid by my company, work done under my direction by contract.

Q. You did not use, then, as a basis of computation, an amount per mile based upon the contract price of the whole road, for instance, such contracts as made by the Southern Pacific Railroad Company to construction companies for construction of road?

A. No, sir; I used the contract prices that we custom-

arily pay at present to contractors who execute the work on the ground.

Mr. SINGER.—Will you excuse the signature of Mr. Hood to his deposition?

Mr. CALL.—Yes.

In the Circuit Court of the United States, Ninth Circuit, Southern District of California.

THE UNITED STATES, Complainants, vs. THE SOUTHERN PACIFIC RAILROAD COMPANY, D. O. MILLS et al., Defendants.	Consolidated Nos. 675, 587 and 662.

Certificate of Special Examiner.

I certify the foregoing testimony was taken pursuant to an order of Court made on the 12th day of January, A. D. 1898, at the office of William Singer, Jr., rooms 61-2, Union Trust Building, in the city and county of San Francisco, and State of California, at the several times set forth in the foregoing record, in my presence, and in the presence of counsel for the respective parties to the above-entitled cause; that previous to giving his testimony each of the witnesses in said record named was by me duly sworn to tell the truth, the whole truth, and

nothing but the truth in said cause; that said testimony was fully, truly, and correctly taken in shorthand and transcribed by me; that the said testimony, after being so transcribed, was read by the said witnesses, and signed by them, respectively, except in those cases where such reading and signing were, by agreement of said counsel, waived, as in said record set forth; and that I have retained said testimony for the purpose of delivering the same with my own hand to the court for which it was taken.

During the taking of said testimony there were introduced in evidence certain exhibits, numbered, respectively, Defendants' Exhibits 44 to 77, both inclusive, and which form part of said testimony. Of said exhibits, numbers 44, 46, 47, 48, 49, 50, 51, 52, 53, 54, 60, 76 and 77 accompany this record, or certified copies of same, were stipulated by counsel, as set forth in said record. Defendants' Exhibits Nos. 45, 55, 56, 57, 58, 59, were, by stipulation of counsel, as shown in the foregoing record, introduced by reference, and were not produced before the examiner. By stipulation of counsel, as set forth in said record, Defendants' Exhibit No. 76 was substituted in lieu of Defendants' Exhibits Nos. 61 to 75, both inclusive, and said last-named exhibits, after being marked with their respective exhibit numbers, were returned to said defendants.

I further certify that I am not attorney nor of counsel for any of the parties to said cause, nor in any way interested in the event thereof.

In witness whereof, I have hereunto set my hand this 31st day of January, A. D. 1898.

STEPHEN POTTER,
Special Examiner.

Defendants' Exhibit No. 44.

Contract No. ———.

Issued ..... to ..... For .....
....
Acres. Agreed Pur. Price, $..... Purchase price Paid, $..... Int. Paid, ... Deed issued ..... to ..... Present Owner of Contract, ... Patent No. ..... Issued ....., for ..... acres of land described above.

Contract No. .....

Issued ..... to ..... For .....
....
Acres. Agreed Pur. Price, $..... Purchase price Paid, $..... Int. Paid, ... Deed issued ..... to ..... Present Owner of Contract, ... Patent No. ..... Issued ....., for ..... acres of land described above.

Contract No. .....

Issued ..... to ..... For .....
....
Acres. Agreed Pur. Price, $..... Purchase price Paid, $..... Int. Paid, ... Deed issued .....

to ..... Present Owner of Contract, ... Patent No. ..... Issued ....., for ..... acres of land described above.

[Endorsed]: U. S. v. S. P. Consd. 675, 587 and 662. Defendant's Exhibit 44. Stephen Potter, Special Examiner.

Defendants' Exhibit No. 46,

Contract No. 11,322.

This agreement made and entered into in duplicate this 8th day of December, 1893, between the Southern Pacific Railroad Company, a corporation duly organized and existing under the laws of the United States and of the State of California, party of the first part, and the Colorado River Irrigation Company, a corporation duly organized and existing under the laws of the State of Colorado, party of the second part, witnesseth as follows:

First.—The party of the first part agrees to sell and convey to the party of the second part, for the price of two dollars and fifty cents ($2.50) per acre, in U. S. gold coin, on the terms hereinafter specified, its unimproved odd-numbered sections of land situate in Riverside and San Diego counties, in the State of California, in the territory lying between the following boundaries, viz: on the south, the international line separating California from Mexico; on the north, the railroad station at Indio, in Riverside county, California; on the east and west, the east and west branches of the canals of said Colorado River Irrigation Company as finally surveyed and located by the said party of the second part, and generally desig-

nated upon the annexed map marked "A," and made a part hereof; and for the purpose of obtaining a more particular description of the said east and west boundaries, the said party of the second part hereby agrees that it will, on or before July 1st, 1895, finally survey and locate upon the ground the said eastern and western branches of its canals above mentioned, and will furnish to the party of the first part a plat or map of such survey and location within said time; and immediately thereupon the parties hereto will execute a supplemental agreement with map or plat attached, particularly defining and designating the said eastern and western boundaries of the land above mentioned and herein agreed to be sold and conveyed.

Second.—The party of the second part agrees to buy from the party of the first part the lands mentioned above in the first article of this agreement, and to pay therefor two dollars and fifty cents ($2.50) per acre, at the times and with the interest as hereinafter stated.

Third.—It is agreed by and between the parties hereto, and the understanding is, that there is expressly excepted and withheld from this contract all rights of way now used or that may be hereafter required by the party of the first part for the main line, branches, side tracks, and switches of its railroads; also all lands that are or may hereafter be required for railroad yards, or terminals, or depots, shops, warehouses, hotels, station buildings, and for all uses incidental or convenient to the operating of its railroads or the development of its railroad business; also all parcels of land in said odd-numbered sections

heretofore conveyed or contracted to be conveyed by the party of the first part, but no deduction from the acreage of lands to be paid for hereunder shall be made for a right of way one hundred (100) feet in width as above reserved.

It is also agreed that the party of the first part shall have the sole right to decide what lands shall be withheld from sale under this contract for any purpose or reason in this article mentioned; provided only that said party of the first part shall exercise its right so to withhold any piece or parcel of land not later than thirty (30) days after the party of the second part shall have asked a conveyance and offered payment therefor.

Fourth.—Payment for the lands hereby agreed to be sold shall be made to the party of the first part at its landoffice in the city and county of San Francisco, California, as follows:

As to all lands for which United States patents shall have been issued within ten years from the date hereof, the full price therefor shall be paid on or before the expiration of said ten years.

As to all lands for which United States patents shall be issued after ten years from the date hereof, full payment therefor shall be made within ninety (90) days after written notice of the issuing of the patents therefor given by the party of the first part to the party of the second part.

All purchase money for said lands not paid on or before the first day of June, 1896, shall thereafter bear interest until paid at the rate of six (6) per cent per annum, paya-

ble annually on the first day of June in each year thereafter; provided, however, that as to all lands lying south of the third parallel south, designated on said map "A," hereto attached, and covered by the alleged maps of location of the line of the Texas Pacific Railroad Company, sometimes called the Texas & Pacific Railroad Company, payment of interest may be deferred until the alleged title, or cloud upon title based upon said maps of location has been quieted or removed. In all cases where the payment of interest is deferred, as above provided, such interest shall be compounded annually at six per cent (6%) per annum, commencing with the interest day of June 1st, 1897.

It is hereby agreed that, if the United States patents to the party of the first part shall not have been issued within ten (10) years from the date hereof for any of said lands lying south of the third parallel south, above described, and the party of the second part shall be enabled to secure said patents by reason of this contract, or if it should secure title by reason of any legislation applying to lands sold by railroad companies under the acts of Congress now existing, or that may be passed hereafter in relation thereto; then, and in that event, the party of the second part may deduct from the purchase price for said lands last above described, the amount by it paid to the general Government for any of said lands, not exceeding one and twenty-five hundredths dollars ($1.25) per acre; provided, however, that if the party of the second part shall obtain title to said lands in bulk by legislation existing, or that may hereafter be passed, then, and

in that event, the party of the second part shall pay to the party of the first part the sum of one and twenty-five hundredths dollars ($1.25) per acre, irrespective of the amount paid to the general Government.

It is understood and agreed that the party of the first part will obtain United States patents to all of said lands as soon as practicable, and to the best of its ability.

Fifth.—It is is understood and agreed that the purpose of this contract is to bring said lands into market and under cultivation in small holdings, and with irrigating rights; and to effect said purpose, it is agreed that the said party of the second part shall not hold any of said lands at a higher price than fifty dollars ($50.00) per acre, except that lands within two (2) miles from the center of any townsite laid out by the party of the second part may be held at higher prices; provided, that no two of such townsites shall be laid nearer than twelve (12) miles from each other, measuring from the center of each townsite. And said party of the second part agrees to put said lands on the market as soon as practicable after its canals and irrigating ditches shall been constructed, so as to supply water for said lands and as such construction progresses.

Sixth.—Whenever full payment, principal and interest, is made as hereinbefore provided for any of the legal subdivisions of said lands, as designated by the Government maps, herein contracted to be sold, the party of the first part, after receipt of United States patents therefor, will thereupon convey the lands so paid for in full to the party of the second part by deed of grant, bargain, and sale,

reserving all claim of the United States to the same as mineral land, and also the right (which is hereby granted by the party of the second part to the party of the first part) to use all water from any of the ditches, reservoirs, or wells upon said lands necessary or convenient for the operation or repair of said railroads, and upon condition that the party of the second part, its successors and assigns, shall at all times build and maintain good and sufficient fences on both sides of the right of way of said railroads now constructed, or which may be hereafter constructed through the said lands.

The party of the second part may make full payment as above provided for any of said lands by legal subdivisions as designated by the Government maps, at any time before the issuing of United States patents therefor to the party of the first part, in which case the party of the first part shall execute contracts for deeds for such lands, which the party of the second part may assign to purchasers; provided, that in such cases the party of the second part will not, and it hereby covenants and agrees not to, sell the land covered by said contracts for less than twelve and fifty-hundredths dollars ($12.50) per acre.

Seventh.—From time to time as parcels of the lands in this contract described are sold or disposed of by the party of the second part, it will pay, and hereby agrees to pay, to the party of the first part one-fourth of the excess received by it for said lands, over and above the price paid therefor by it to the party of the first part as hereinbefore provided, such excess payments to be made and

applied upon account of the purchase price above provided for said lands, and to be continued until the principal and interest of such purchase price are fully paid. Within thirty (30) days after the receipt of any of said excess payments by the party of the first part, it shall have the right to apply such payments to the purchase of any specific legal subdivision of said lands for which it then holds a United States patent, and shall give the party of the second part written notice of such application as soon as the same is made as aforesaid.

Eighth.—In consideration of the making of this agreement, it is hereby agreed by the said party of the second part that it will pay or cause to be paid, promptly when due, all taxes and assessments of every kind and nature that may be levied for the year 1894, and thereafter, upon said lands described in this agreement, and if the party of the second part shall fail, neglect, or omit to pay said taxes and assessments, or any part thereof, when and as they become due and payable, then the party of the first part may pay the same or buy in the land at tax sale, and the sum so paid, with the amounts of legal penalties for delinquency, shall be added to, and become part of, the unpaid remainder of purchase money for said land, and shall bear interest at the same rate, and shall be paid on demand at the place hereinbefore provided for the payment of purchase money and interest thereon.

Ninth.—The said party of the second part further agrees that it will pay the expenses of making, executing, and recording all deeds, contracts, assignments, and mortgages that may be necessary to be executed either by

or to the said party of the first part to convey said land, not exceeding two dollars and fifty cents ($2.50) for drawing each document so executed, and in addition thereto the legal fees for acknowledging and recording the same.

Tenth.—It is further agreed by and between the parties hereto, inasmuch as the canal of the said party of the second part will pass over and across the tract of land known as the "Yuma Indian Reservation," that in the event that said "Yuma Indian Reservation," or any part thereof, shall be thrown open for settlement, and if in such case the party of the first part shall be entitled to claim and hold any part of the land now included in said reservation, then this contract of purchase is intended to and shall include each and all odd-numbered sections belonging to said party of the first part through which the canal of said party of the second part shall pass, and also all such odd-numbered sections as it shall obtain within the limits of said Indian reservation lying at a lower grade than said canal, and capable of being irrigated therefrom.

Eleventh.—The party of the second part shall prosecute work on its canals with due diligence, and shall not suspend work on them for a longer period than four (4) months in any one year, and shall distribute water for irrigation upon the lands herein mentioned before it makes any general distribution of water from its canals in Lower California, south of the northern boundary of Mexico.

Twelfth.—From and after the execution of this contract, the party of the second part shall have the right

to enter on said lands for the purpose of constructing its canals and ditches, and to occupy the right of way necessary therefor, and also to use said lands for pasturage, paying to the said party of the first part on account of the sums due under this contract all moneys earned and received from said pasturage.

Thirteenth.—It is further agreed and understood by and between the parties hereto that possession of the lands herein mentioned is given to the party of the second part at the time of signing this contract, but said possession, and all rights of the party of the second part under this instrument, are dependent upon strict compliance with the fulfillment of all of its terms by said party of the second part; and it is further agreed that until the full payment of purchase money and interest, taxes, and assessments, no strip or waste shall be made on said premises without the previous written consent of the party of the first part.

Fourteenth.—It is further agreed and understood that time is of the essence of this contract, and that if the party of the second part shall fail to make punctually any of said payments of interest or purchase money, or shall fail to comply strictly with any of the stipulations of this contract, and shall remain in default for ninety (90) days from and after receipt of written notice from the party of the first part of the amounts due, then from and after the expiration of the said period of ninety (90) days, this contract shall be ended, and all the rights of the said party of the second part therein terminated, and the party of the second part forever foreclosed of any

rights of purchase or title or interest therein or thereunder; and the said party of the first part shall retain and keep unto itself all the moneys paid to it by said party of the second part, as payment in full for the use, occupation, possession, and the privilege of using, occupying, and possessing said lands and premises, from the date of entering into this contract of purchase, and until the termination thereof as aforesaid, and said party of the first part, its successors or assigns, may, without notice, enter upon, take and hold possession of the said premises with all the improvements thereon.

Fifteenth.—Should the lands mentioned in this agreement, or any of them, remain with or revert to the party of the first part after the party of the second part shall have constructed any of its proposed canals or ditches, the party of the second part will sell to the party of the first or any of its vendees, at the time when they shall elect to buy, water rights from said ditches for the irrigation of such of said lands as may be accessible therefrom, at prices not exceeding those charged to other persons, said water rights to be for water of sufficient quantity to insure the thorough irrigation of such lands.

Sixteenth.—It is further agreed that this contract shall not be assignable except by endorsement, and with the written consent of the party of the first part, and the written promise of the assignee to perform all the undertakings and promises of the said party of the second part as hereinbefore set forth.

Seventeenth.—The party of the second part hereby agrees to have this contract approved, confirmed, and

ratified by its stockholders by resolution duly passed at the next annual meeting of said stockholders, to be held in the month of July, 1894, and will, within one month thereafter, furnish to the party of the first part a duly certified copy of such resolution.

In witness whereof, the said party of the first part has caused these presents to be signed in duplicate by its secretary and its land agent, and sealed with its corporate seal; and the said party of the second part likewise in duplicate has caused its name to be signed by its president and secretary, and sealed with its corporate seal, being thereunto duly authorized by resolution of its board of directors.

NOTE.—In 14th article hereof, in 8th line from bottom of page 8, after the word "and," the words "after the" were interlined before signing.

[Seal of Southern Pacific Railroad Company.]

J. L. WILLCUTT,
Secretary So. Pac. R. R. Co.
JEROME MADDEN,
Land Agent So. Pac. R. R. Co.

C. H. DOW,
President Colo. Riv. Irr. Co.

[Seal of The Colorado River Irrigation Company.

P. J. McLEAN,
Secretary Colo. Riv. Irr. Co.

[Endorsed]: No. 11,322. Contract for a deed. Southern Pacific Railroad Company to the Colorado River Irrigation Company. Dated December 8th, 1893. 66 Broad St., New York.

(A map is attached entitled "Map of the Colorado Desert, Sonora Mesa, and Delta of the Rio Colorado, 1893. Copyright by the Colorado River Irrigation Company," marked "A.")

In the Circuit Court of the United States, Ninth Circuit, Southern District of California.

THE UNITED STATES, Complainants, vs. THE SOUTHERN PACIFIC RAILROAD COMPANY, D. O. MILLS et al., Defendants.	Consolidated Nos. 675, 587 and 662.

Certificate of Special Examiner.

I certify that I have compared the foregoing document with the original contract for a deed between the Southern Pacific Railroad Company and the Colorado River Irrigation Company, numbered 11,322, dated December 3d, 1893, and marked "Defendants' Exhibit No. 46" in this cause, and find it to be a full, true, and correct copy of said original.

San Francisco, January 18th, 1898.

STEPHEN POTTER,
Special Examiner.

[Endorsed]: U. S. vs. S. P. Consd. 675, 587 and 662. Copy of Defendants' Exhibit No. 46.

Defendants' Exhibit No. 47.

G. 30. (10-17-90—2,000.)

Southern Pacific Railroad Company.

No. ..... Land Department.

This agreement, made at San Francisco, California, this ..... day of ....., A. D. 189.., between the Southern Pacific Railroad Company, party of the first part, and ....., of the county of ....., State of California, part.. of the second part, witnesseth:

That the party of the first part, in consideration of the covenants and agreements of the part.. of the second part hereinafter contained, agrees to sell to the part.. of the second part, the following tract..of land, situated in the county of ....., State of California, and known and designated on the public surveys of the United States as .... of section ....., township ....., range ....., ..., base and meridian, containing .....-100 acres, for the sum of .....-100 dollars, gold coin of the United States.

And the part.. of the second part, in consideration of the premises, agree.. to buy the land hereinbefore described, and to pay to the party of the first part, the said sum of.....-100 dollars, as follows, to wit: .....-100 dollars, and also $....., one year's interest in advance on the remainder, in United States gold coin of the present standard of value, on the execution of this contract

(which two last-mentioned sums have this day been fully paid), and the remainder, to wit, the sum of ..... -100 dollars, with interest thereon, annually in advance, at the rate of seven per cent per annum, both in United States gold coin, of the present standard of value, at its office in the city and county of San Francisco, on or before the ..... day of ....., 189.., and, also, to pay all taxes and assessments that may at any time be levied or imposed upon said premises, or any part thereof; and if the part.. of the second part shall fail to pay such taxes or assessments, or any part thereof, at any time when the same shall become due, then the said party of the first part may pay the same; and all sums so paid by the party of the first part shall be added to and become part of the unpaid remainder, and shall bear interest at the same rate, and be paid in the same manner and at the same time and place hereinbefore provided for the payment of said remainder and the interest thereon.

It is further agreed that upon the punctual payment of said purchase money, interest, taxes, and assessments, and the strict and faithful performance by the part.. of the second part ....., legal representatives or assigns, of all the agreements herein contained, the party of the first part will, after the receipt of a patent therefor from the United States, upon demand and the surrender of this instrument, execute and deliver to the part.. of the second part, ... heirs and assigns, a grant, bargain, and sale deed of said premises, reserving all claim of the United States to the same as mineral land, and also reserving therein to the party of the first part, for railroad pur-

poses, a strip of land one hundred feet wide, lying equally on each side of the track of the railroad of said company, and all branch railroads now or hereafter constructed thereon, and the right to use all water needed for the operating and repair of said railroads ....., and with the condition that the part.. of the second part, ... heirs and assigns, shall erect and forever maintain good and sufficient fences on both sides of said strip or strips of land.

It is further agreed that until the full payment of said purchase money, interest, taxes, and assessments, no strip or waste shall be made on said premises, and that no wood or growing trees shall be cut thereon, except for necessary fuel for the family of the legal occupant under this contract, and for the erection of buildings or fences on said land, without the previous written consent of the party of the first part.

It is further agreed that the part.. of the second part may at once enter upon, take, and hold possession of said premises; provided, however, that if the part.. of the second part shall fail to make any of said payments of remainder, or interest, taxes, or assessments as herein provided, or shall fail to comply strictly with any of the stipulations of this contract, then this right shall cease, and the party of the first part, its successors or assigns, may without notice enter upon, take, and hold possession of the said premises with all the improvements thereon.

It is further agreed between the parties hereto that the party of the first part claims all the tracts hereinbefore described, as part of a grant of lands to it by the Congress

of the United States; that patent has not yet issued to it for said tracts; that it will use ordinary diligence to procure patents for them; that, as in consequence of circumstances beyond its control, it sometimes fails to obtain patent for lands that seem to be legally a portion of its said grant, therefore, nothing in this instrument shall be considered a guarantee or assurance that patent or title will be procured; that in case it be finally determined that patent shall not issue to said party of the first part for all or any of the tracts herein described, it will, upon demand, repay (without interest) to the part.. of the second part, all moneys that may have been paid to it by ..... on account of any such tracts, as it shall fail to procure patent for, the amount of repayment to be calculated at the rate and price per acre, fixed at this date for such tracts by said party of the first part as per schedule on page 3 hereof; that said lands being unpatented, the party of the first part does not guarantee the possession of them to the part.. of the second part, and will not be responsible to ..... for damages or cost in case of ..... failure to obtain and keep such possession.

It is further agreed that if the party of the first part shall obtain patent for part of the lands herein described, and shall fail to obtain patent for the remainder of them, this contract shall in all its provisions be and remain in full force and virtue as to the tracts patented, and shall, except as to repayments herein provided for, be null and void as regards those tracts for which it shall be finally determined that patents cannot be obtained.

It is further agreed that the part.. of the second part

will never deny that the tracts herein described, or any part of them, are a part of said grant, and will do no act to hinder, delay, or impede the obtaining of patent for them by the party of the first part; and that ..... will not obtain or hold possession of all or any of them adversely to said party of the first part.

It is further agreed that this contract shall not be assignable, except by endorsement, and with the written consent of the party of the first part and the written promise of the assignee.. to perform all the undertakings and promises of the part.. of the second part as above set forth.

It is further agreed that the part.. of the second part shall pay $3.00 for expenses of the acknowledgments to the deed that shall be issued on this contract.

In testimony whereof, the party of the first part has caused these presents to be signed in duplicate by its secretary and land agent, and the part.. of the second part ha.. signed ..... name.. hereto.

....,

Land Agent S. P. R. R. Co.

....,

Secretary S. P. R. R. Co.

.....(Seal)

.....(Seal)

Schedule of prices at which the lands described in This Contract have been sold this ..... day of ..... 189...

	Fraction	Sec.	Tp.	Range.	B. & M.	No. of Acres	Rate per Acre	Amount.
							$	$

....., the part.. of the second part in the within contract No. ....., for and in consideration of ..... dollars, to ..... in hand paid, do.. hereby sell, assign, and transfer all ..... right, title, interest, and claim in and to the within-described tract.. or parcel..of land, and the within contract ..... unto ....., h.. heirs and assigns forever, subject to the stipulations and conditions therein contained, which are to be performed by said assignee.

Given under ..... hand and seal.. this ..... day of ....., A. D. 18..

..... [Seal.]

..... [Seal.]

State of California, }
..... County of ..... } ss.

On this ..... day of ....., in the year one thousand eight hundred and ....., before me, ..., a ..... in and for said county, personally appeared ....., known to me to be the person whose name ..... subscribed to the above instrument, and acknowledged to me that ..... executed the same.

In witness whereof, I have hereunto set my hand and affixed my official seal the day and year in this certificate first above written.

.....,

Notary Public.

On this ..... day of ....., 18.., in consideration of the above and foregoing assignment to me, ... hereby agree with the assignor therein named, and with

the Southern Pacific Railroad Company, to do and perform all the stipulations and conditions in the within contract required to be done and performed by the part.. thereto of the second part.

..... [Seal.]

..... [Seal.]

P. O. Address .....

San Francisco, Cal., ..., 18...

The Southern Pacific Railroad Company hereby consents to the above assignment to .....

.....,

By .....,

Its Land Agent.

[Endorsed]: Unpatented lands. No. ..... Contract for a deed. Southern Pacific Railroad Company to ..... Dated ....., 189... Interest, $...., due on the ..... day of ..... of each year. Remainder of principal $....., due on the ..... day of ....., 189...

U. S. vs. S. P. Consd. 675, 587, and 662. Defendants' Exhibit No. 47. Stephen Potter, Special Examiner.

Defendants' Exhibit No. 48.

GL. I. A. (Old G 84) 8-31-94.

Deed No. .....

To All to Whom These Presents Shall Come:

The Southern Pacific Railroad Company, a corporation duly incorporated and organized under the laws of the State of California, and D. O. Mills and Gerrit L. Lan-

sing, trustees of all the lands of the said Southern Pacific Railroad Company, lying in the State of California, which remained unsold on the first day of April, A. D. 1875, send greeting:

Whereas, on the first day of April, A. D. 1875, the said Southern Pacific Railroad Company conveyed all its lands lying in the State of California, then unsold, of which the lands hereinafter described were and are a part, to D. O. Mills and Lloyd Tevis, to hold in trust as security for the payment of forty-eight thousand bonds, forty-four thousand thereof for the sum of one thousand dollars each, and four thousand thereof for the sum of five hundred dollars each, issued and to be issued by said Southern Pacific Railroad Company in seven series, to be designated by the letters of the alphabet, commencing with the letter A, and followed by the succeeding letters in regular order to and including the letter G; series A to consist of thirteen thousand bonds for one thousand dollars each, numbered from one to thirteen thousand, both inclusive, and four thousand bonds for five hundred dollars each, numbered from thirteen thousand and one to seventeen thousand, both inclusive; series B to F, both inclusive, to consist of five thousand bonds each, for one thousand dollars each, numbered from seventeen thousand and one to forty-two thousand, both inclusive; series G to consist of six thousand bonds, for one thousand dollars each, numbered from forty-two thousand and one to forty-eight thousand, both inclusive. All of said bonds payable thirty years after date, with interest at the rate of six per centum per annum, payable semi-annually, said

series A to bear date April first, eighteen hundred and seventy-five, and the said several succeeding series to bear such dates respectively as the board of directors of said Southern Pacific Railroad Company may direct; all of said bonds aggregating the sum of forty-six millions of dollars;

And whereas, said deed of trust, among other matters, provided that the said Southern Pacific Railroad Company should have the sole and exclusive control and management of said lands, with full power to make sales of the same upon such terms and conditions as might, from time to time, be agreed upon between the said railroad company and the said trustees; and that when such sales had been made and the purchase money fully paid, the said company and the said trustees should unite in a conveyance in fee simple of the lands so sold to the purchaser or purchasers thereof, which conveyance should absolutely and forever release the lands so conveyed from any and all lien or encumbrance for or on account of said bonds, or any other debt or obligation of the said railroad company;

And whereas, on the 24th day of March, 1883, Lloyd Tevis, one of the trustees, did resign his trust under said conveyance of the first of April, 1875; and whereas, on the 3d day of April, 1883, the said D. O. Mills, the remaining trustee under said conveyance, did, pursuant to the terms of his trust, nominate Gerrit L. Lansing, of the city of San Francisco, and State of California, to fill the vacancy caused by the resignation of said Lloyd Tevis;

And whereas, on the 17th day of April, 1883, the board

of directors of the said Southern Pacific Railroad Company, pursuant to the terms of said trust, did ratify and approve said nomination, and did appoint said Gerrit L. Lansing to fill said vacancy; and whereas, on the 18th day of April, 1883, the said Gerrit L. Lansing did *formerly* accept the position of trustee under said deed of trust;

And whereas, said deed of trust further provided that, for the sake of convenience in making said conveyances, the said trustees should have power to act by attorney, duly nominated and appointed by them jointly by letter of attorney, which should be duly acknowledged and recorded in each and all the counties in which said lands, or any part thereof, are situated, and that all deeds made in their name by such attorney should have the same force and effect as if made by them in person;

And whereas, on the 21st day of April, 1883, said trustees, D. O. Mills and Gerrit L. Lansing, acting under the power so vested in them, did nominate, constitute, and appoint, by letter of attorney, duly acknowledged and recorded as aforesaid, Jerome Madden, of the city and county of San Francisco, and State of California, their true and lawful attorney, in their names, place, and stead, to make, execute, and deliver all conveyances required of them as aforesaid;

And whereas, the said railroad company contracted to sell the lands hereinafter described, pursuant to the foregoing conditions, to ....., for the sum of ..... dollars, which sum has been fully paid to the said D. O. Mills and Gerrit L. Lansing, trustees as aforesaid .....
.....

Now, therefore, in consideration of the premises, and the said sum of ..... dollars, the receipt whereof is hereby acknowledged, the said Southern Pacific Railroad Company, and the said D. O. Mills and Gerrit L. Lansing, trustees as aforesaid, do grant, bargain, sell, and convey to the said ....., and to ..... heirs and assigns, the following described tract.. of land situate, lying, and being in the county of ....., and State of California, to wit: ....., of section No. ....., in township ....., of range ....., ... base and meridian, containing ..... acres, according to the United States surveys, together with all the privileges and appurtenances thereunto appertaining and belonging; excepting and reserving all liability on the part of the Southern Pacific Railroad Company for taxes thereon since ....., 18.., the said purchaser.. having heretofore agreed with said company to pay the same ....., and also reserving all claim of the United States to said tract.. as mineral lands.

To have and to hold the aforesaid premises, to the said ....., ... heirs and assigns, to ..... and their use and behoof forever.

In testimony whereof, the said Southern Pacific Railroad Company has caused its name to be signed to these presents by its president and secretary, and its corporate seal to be hereunto affixed; and the said D. O. Mills and Gerrit L. Lansing, trustees, by their said attorney, Jerome Madden, have hereunto subscribed their names and af-

fixed their seals, this ..... day of ....., A. D. 189...

SOUTHERN PACIFIC RAILROAD COMPANY,

[Seal] By .....,

By ....., Its President.

Its Secretary. ..... [Seal.]

..... [Seal.]

Trustees.

By .....,

Their Joint Attorney in Fact.

State of California,
City and County of San Francisco. } ss.

On this.....day of....., in the year one thousand, eight hundred and ninety-....., before me, ..., a notary public in and for said city and county of San Francisco, State of California, personally appeared....., known to me to be the president, and....., known to to me to be the secretary, of the corporation that executed the within instrument; and each of them acknowledged to me that such corporation executed the same; also, on this the day aforesaid, before me, the notary public aforesaid, personally appeared Jerome Madden, known to me to be the person whose name is subscribed to the within instrument, as the attorney in fact of D. O. Mills and Gerrit L. Lansing, and acknowledged to me that he subscribed the names of the said D. O. Mills and Gerrit L. Lansing thereto as principals, and his own name as attorney in fact.

In witness whereof, I have hereunto set my hand and affixed my official seal at my office in the city and county of San Francisco, State of California, on the day and year above written.

[Seal] ....., Notary Public in and for the City and County of San Francisco, and State of California.

[Endorsed]: Deed No.....Southern Pacific Railroad Co., D. O. Mills, and Gerrit L. Lansing, Trustees, to ..... Deed. Dated....., 189..

U. S. v. S. P. Cons*d*. 675, 587, and 662. Defendants' Exhibit No. 48. Stephen Potter, Special Examiner.

Defendants' Exhibit No. 49.

United States Landoffice.

Los Angeles, California.

December 19th, 1883.

LIST NO. 12.

LANDS SELECTED.

By the

SOUTHERN PACIFIC RAILROAD COMPANY.

Granted Limits.

Office of the Southern Pacific Railroad Company,
San Francisco, California.

I, Joseph L. Willcutt, secretary of the Southern Pacific Railroad Company, do hereby certify that Jerome Madden

was appointed land agent of the said Southern Pacific Railroad Company by the board of directors of said company, at a meeting held on the tenth (10) day of May, A. D. 1876, and that since that time he has been continuously, and is now, the land agent of the said Southern Pacific Railroad Company.

In testimony whereof, I have hereunto set my hand and affixed the corporate seal of the said Southern Pacific Railroad Company, the 1st day of December, A. D. 1883.

[Seal of Southern Pacific Railroad Company.]

JOSEPH L. WILLCUTT,

Secretary of the Southern Pacific Railroad Company.

LIST OF LANDS

in the

Los Angeles Land District,

California.

SELECTED BY THE

SOUTHERN PACIFIC RAILROAD COMPANY.

of California.

The undersigned, the duly authorized land agent of the Southern Pacific Railroad Company of California, under and by virtue of the 23d section of the act of Congress, approved March 3rd, 1871, entitled "An act to incorporate the Texas Pacific Railroad Company, and to aid in the construction of its road, and for other purposes," and un-

der and by virtue of the act of Congress, approved July 27th, 1866, entitled "An act granting lands to aid in the construction of a railroad and telegraph line from the States of Missouri and Arkansas to the Pacific Coast," and the further act approved July 25th, 1868, entitled "An act to extend the time for the construction of the Southern Pacific Railroad in the State of California," and the joint resolution of Congress, approved June 28th, 1870, "concerning the Southern Pacific Railroad of California," and under and in pursuance of the rules and regulations prescribed by the commissioner of the general landoffice, hereby makes and files the following list of selections of public lands claimed by the said company as inuring to it, and to which it is entitled under and by virtue of the grants, and provisions of the said acts of Congress, and the location of the line of route of the railroad and telegraph of said company; being in part for the fifth (5) section (one hundred and eighteen 37-100 (118.37) miles) of the same, commencing at a point in S. W. ¼, sec. 24, T. 5 S., R. 7 E., S. B. B. and M., and ending at the termination of the 118 37-100 mile southeasterly therefrom, which said section of road and telegraph has been accepted by the President of the United States, as provided in the aforesaid acts and joint resolution of Congress. The selections being particularly described as follows.

JEROME MADDEN,
Land Agent of the Southern Pacific Railroad Company.

RAILROAD LIST. South of Base Line and East of San Bernardino principal Meridian

No.	Part of Section	No. of Section	No. of Town	No. of Range	AREA Acres	100	Fees of Register and Receiver		Remarks
	Fracl. S 1/2	19	16 S.	22 E.	320.	40	4	00	

State of California,
City and County of San Francisco. } ss.

I, Jerome Madden, being duly sworn, depose and say that I am the land agent of the Southern Pacific Railroad Company; that the foregoing list of lands which I hereby select is a correct list of a portion of the public lands claimed by the said Southern Pacific Railroad Company as inuring to it, to aid in the construction of the railroad of said company from Indio to Yuma, for which a grant of lands was made by the acts of Congress approved March 3d, 1871, July 27th, 1866, July 25th, 1868, and June 28th, 1870, as aforesaid; that the said lands are vacant, unappropriated, and are not interdicted mineral nor reserved lands, and are of the character contemplated by the grant, being within the limits of twenty (20) miles on each side of the line of route for a continuous distance of one hundred and eighteen 37-100 (118.37) miles, being for the fifth (5th) section of said road, starting from a point in the S. W. ¼, sec. 24, T. 5 S., R. 7 E., S. B. B. and M., and ending at the termination of the 118 37-100 mile southeasterly therefrom.

JEROME MADDEN. [Seal]

Sworn to and subscribed before me this 10th day of December, 1883.

[Seal of Superior Court, City and County of San Francisco, Cal.]

J. D. RUGGLES,
Deputy County Clerk of the City and County of San Francisco, California, and ex-officio Deputy Clerk of the Superior Court thereof, the same being a Court of Record.

United States Landoffice,

Los Angeles, Cal., December 19, 1883.

We hereby certify that we have carefully and critically examined the foregoing list of lands claimed by the Southern Pacific Railroad Company, under the grant to the said Southern Pacific Railroad Company, by acts of Congress approved March 3d, 1871, July 27th, 1866, July 25th, 1868, and June 28th, 1870, above mentioned, and selected by Jerome Madden, the duly authorized agent; and we have tested the accuracy of said list by the plats and records of this office, and that we find the same to be correct; and we further certify that the filing of said list is allowed and approved, and that the whole of said lands are surveyed public lands of the United States, and within the limit of twenty (20) miles on each side; and that the same are not, nor is any part thereof, returned and denominated as mineral land or lands, nor claimed as swamp lands; nor is there any homestead, pre-emption, State, or other valid claim to any portion of said lands on file or record in this office.

We further certify that the foregoing list shows an assessment of the fees payable to us allowed by the act act of Congress approved July 1, 1864, and contemplated by the circular of instructions dated January 24, 1867, addressed by the commissioner of the general landoffice, to registers and receivers of the United States landoffices; and that the said company have paid to the undersigned,

the receiver, the full sum of four ($4.00) dollars, in full payment and discharge of said fees.

CHAS. R. JOHNSON,
Register.

J. W. HAVERSTICK,
Receiver.

United States Surveyor General's Office,

San Francisco, California, December 10th, 1883.

I, W. H. Brown, surveyor general for the United States in and for the State of California, hereby report and certify that the Southern Pacific Railroad Company has this day filed with me, at San Francisco, a duplicate certificate of deposit No. 117, dated December 10th, 1883, to the credit of the United States, showing that the sum of $10.80 has been deposited as cost of survey, and $3.60 for office work, and that the said sums are the correct amount of the cost of survey and office work for the lands mentioned and described in the list of lands hereto annexed, to the extent of said list.

Survey	$10.80
Office work	3.60
	$14.40

In testimony whereof, I have hereunto set my hand and official seal.

[Seal of Surveyor General's Office, California.]

W. H. BROWN,
Surveyor General.

In the Circuit Court of the United States, Ninth Circuit, Southern District of California.

THE UNITED STATES, Complainants, vs. THE SOUTHERN PACIFIC RAILROAD COMPANY, D. O. MILLS et al., Defendants.	Consolidated Nos. 675, 587, and 662.

Certificate of Special Examiner.

I certify that I have compared the foregoing document with the original document entitled "List No. 12, Lands Selected by the Southern Pacific Railroad Company, Granted Limits," marked "Defendants' Exhibit No. 49," in the above cause, and find it to be a correct copy of said original, in so far as it describes lands which are shown on Exhibit "A," attached to the answer, not to have been patented to the company, and of the certificates attached therto.

San Francisco, Cal., January 18th, 1898.

STEPHEN POTTER,
Special Examiner.

[Endorsed]: U. S. v. S. P. Cons*d*. 675, 587 and 662. Copy of Defendants' Exhibit No. 49.

Defendants' Exhibit No. 50.

United States Landoffice.

Los Angeles, California.

April 23rd, 1888.

LIST NO. 40.

LANDS SELECTED

by the

SOUTHERN PACIFIC RAILROAD COMPANY.

Granted Limits.

Branch Line.

Office of the Southern Pacific Railroad Company,

San Francisco, California.

I, Joseph L. Willcutt, secretary of the Southern Pacific Railroad Company, do hereby certify that Jerome Madden was appointed land agent of the said Southern Pacific Railroad Company by the board of directors of said company, at a meeting held on the tenth (10th) day of May, A. D. 1876, and that since that time he has been continuously, and is now, the land agent of the said Southern Pacific Railroad Company.

In testimony whereof, I have hereunto set my hand and affixed the corporate seal of the said Southern Pacific Railroad Company, the 17th day of April, A. D. 1888.

[Seal of Southern Pacific Railroad Company.]

JOSEPH L. WILLCUTT,

Secretary of the Southern Pacific Railroad Company.

LIST OF LANDS

in the

Los Angeles Land District, California.

SELECTED BY THE

SOUTHERN PACIFIC RAILROAD COMPANY.

of California.

The undersigned, the duly authorized land agent of the Southern Pacific Railroad Company of California, under and by virtue of the 23rd section of the act of Congress, approved March 3, 1871, entitled "An act to incorporate the Texas Pacific Railroad Company, and to aid in the construction of its road, and for other purposes," and under and by virtue of the act of Congress, approved July 27, 1866, entitled "An act granting lands to aid in the construction of a railroad and telegraph line from the States of Missouri and Arkansas to the Pacific Coast," and the further act approved July 25, 1868, entitled "An

act to extend the time for the construction of the Southern Pacific Railroad in the State of California," and the joint resolution of Congress, approved June 28, 1870, "concerning the Southern Pacific Railroad of California," and under and in pursuance of the rules and regulations prescribed by the commissioner of the general landoffice, hereby makes and files the following list of selections of public lands claimed by the said company as inuring to it, and to which it is entitled under and by virtue of the grants and provisions of the said acts of Congress, and the location of the line of route of the railroad and telegraph of said company; being in part for the second (2nd) and third (3rd) sections (one hundred (100) miles) of the same, commencing at a point in N. E. ¼, sec. 27, T. 1 S., R. 9 W., S. B. B. and M., and ending at a point in S. W. ¼, sec. 24, T. 5 S., R. 7 E., S. B. B. and M., which said sections of road and telegraph have been duly accepted by the President of the United States, as provided in the aforesaid act and joint resolution of Congress. The selections being particularly described as follows.

JEROME MADDEN,

Land Agent of the Southern Pacific Railroad Company.

RAILROAD LIST. North of Base Line, and West of San Bernardino principal Meridian.

No.	Part of Section	No. of Section	No. of Town.	No. of Range	Area		Fees of Register and Receiver		Remarks.
					Acres	100			
	N. W. 1/4.	27	1N.	3W.	(160	00)			

State of California,
City and County of San Francisco. } ss.

I, Jerome Madden, being duly sworn, depose and say that I am the land agent of the Southern Pacific Railroad Company; that the foregoing list of lands which I hereby select is a correct list of a portion of the public lands claimed by the said Southern Pacific Railroad Company as inuring to it, to aid in the construction of the railroad of said company from Spadra to Indio, for which a grant of lands was made by the acts of Congress approved March 3, 1871, July 27, 1866, July 25, 1868, and June 28, 1870, as aforesaid; that the said lands are vacant, unappropriated, and are not interdicted mineral nor reserved lands, and are of the character contemplated by the grant, being within the limits of twenty (20) miles on each side of the line of route for a continuous distance of one hundred (100) miles, being for second and third sections of said road, starting from a point in N. E. ¼, sec. 27, T. 1 S., R. 9 W., S. B. B. and M., and ending at a point in S. W. ¼, sec. 24, T. 5 S., R. 7 E., S. B. B. and M.

JEROME MADDEN. [Seal]

Sworn to and subscribed before me this seventeenth day of April, 1888.

Witness my hand and official seal.

[Seal of Holland Smith, Notary Public, City and County of San Francisco.]

HOLLAND SMITH,
Notary Public in and for the City and County of San Francisco, State of California.

United States Landoffice,

Los Angeles, Cal., April 23rd, 1888.

We hereby certify that we have carefully and critically examined the foregoing list of lands claimed by the Southern Pacific Railroad Company, under the grant to the said Southern Pacific Railroad Company, by acts of Congress, approved March 3, 1871, July 27, 1866, July 25, 1868, and June 28, 1870, above mentioned, and selected by Jerome Madden the duly authorized agent, and we have tested the accuracy of said list by the plats and records of this office, and that we find the same to be correct, except as herein noted; and we further certify that the filing of said list is allowed and approved, and that the whole of said lands are surveyed public lands of the United States, and within the limit of twenty (20) miles on each side; and that the same are not, nor is any part thereof, returned and denominated as mineral land or lands, nor claimed as swamp lands; nor is there any homestead, pre-emption, State, or other valid claim to any portion of said lands on file or record in this office.

We further certify that the foregoing list shows an assessment of the fees payable to us allowed by the act of Congress, approved July 1, 1864, and contemplated by the circular of instructions dated January 24, 1867, addressed by the commissioner of the general landoffice to registers and receivers of the United States landoffices; and that the said company have paid to the undersigned,

the receiver, the full sum of four hundred and eight 50-100 dollars ($408.50), in full payment and discharge of said fees.

H. W. PATTON,
Register.

J. H. POLK,
Receiver.

San Francisco, California, 17th April, 1888.

The Southern Pacific Railroad Company pays, under protest, the expenses of surveying the lands described in this list, because it claims to be exempted from such payment by provisions of the grant of lands made to it by Congress.

JEROME MADDEN,
Land Agent So. Pac. R. R. Co.

United States Surveyor General's Office.

San Francisco, California, April 18th, 1888.

I, R. P. Hammond, Jr., surveyor general for the United States, in and for the State of California, hereby report and certify that the Southern Pacific Railroad Company has this day filed with me, at San Francisco, a duplicate certificate of deposit No. 277, dated April 17th, 1888, to the credit of the United States, showing that the sum of $1,101.96 has been deposited as cost of survey, and $367.32 for office work, and that the said sums are the correct amount of the cost of survey and office work for the lands mentioned and described in the list of lands hereto annexed, to the extent of said list.

Survey	$1,101.96
Office work	367.32
	$1,469.28

In testimony whereof, I have hereunto set my hand and official seal.

[Seal of Surveyor General's Office, California.]

R. P. HAMMOND, Jr.,
Surveyor General.

(Copy.)

State of California,
City and County of San Francisco. } ss.

Jerome Madden, being duly sworn, deposes and says that he is now, and has been continuously since the 10th day of May, 1876, the land agent of the Southern Pacific Railroad Company; that he has caused the N. ½ of sec. 27, T. 1 N., R. 3 W., S. B. M., selected in said company's Los Angeles list No. 40, granted limits, to be carefully examined by the agents and employees of said company as to its mineral or agricultural character, and that to the best of his knowledge and belief no part of said tract is mineral land. JEROME MADDEN.

Subscribed and sworn to before me this 30th day of March, 1897.

[Notary's Seal] E. B. RYAN,
Notary Public in and for the City and County of San Francisco, State of California.

In the Circuit Court of the United States, Ninth Circuit, Southern District of California.

THE UNITED STATES, Complainants,
vs.
THE SOUTHERN PACIFIC RAILROAD COMPANY, D. O. MILLS et al., Defendants.
} Consolidated Nos. 675, 587, and 662.

Certificate of Special Examiner.

I certify that I have compared the foregoing document with the original document entitled "List No. 40, Lands Selected by the Southern Pacific Railroad Company, Granted Limits," marked "Defendants' Exhibit No. 50" in the above cause, and find it to be a correct copy of said original, in so far as it describes lands which are shown on Exhibit "A," attached to the answer, not to have been patented to the company, and of the certificates attached thereto.

San Francisco, Cal., January 18th, 1898.

STEPHEN POTTER,
Special Examiner.

[Endorsed]: U. S. v. S. P. Consd. 675, 587, and 662. Copy of Defendants' Exhibit No. 50.

Defendants' Exhibit No. 51.

United States Landoffice,

Los Angeles, California.

November 25th, 1889.

LIST NO. 49.

LANDS SELECTED

by the

SQUTHERN PACIFIC RAILROAD COMPANY.

Granted Limits.

Branch Line.

Office of the Southern Pacific Railroad Company,

San Francisco, California.

I, Joseph L. Willcutt, secretary of the Southern Pacific Railroad Company, do hereby certify that Jerome Madden was appointed land agent of the said Southern Pacific Railroad Company by the board of directors of said company, at a meeting held on the tenth (10) day of May, A. D. 1876, and that since that time he has been continuously, and is now, the land agent of the said Southern Pacific Railroad Company.

In testimony whereof, I have hereunto set my hand and affixed the corporate seal of the said Southern Pacific Railroad Company, the 8th day of November, A. D. 1889.

[Seal of Southern Pacific Railroad Company.]

JOSEPH L. WILLCUTT,

Secretary of the Southern Pacific Railroad Company.

LIST OF LANDS

in the

Los Angeles Land District, California.

SELECTED BY THE

SOUTHERN PACIFIC RAILROAD COMPANY.

of California.

The undersigned, the duly authorized land agent of the Southern Pacific Railroad Company, of California, under and by virtue of the 23d section of the act of Congress, approved March 3, 1871, entitled "An act to incorporate the Texas Pacific Railroad Company, and to aid in the construction of its road, and for other purposes," and under and by virtue of the act of Congress, approved July 27, 1866, entitled "An act granting lands

to aid in the construction of a railroad and telegraph line from the States of Missouri and Arkansas to the Pacific coast," and the further act, approved July 25, 1868, entitled "An act to extend the time for the construction of the Southern Pacific Railroad in the State of California," and the joint resolution of Congress, approved June 28, 1870, "concerning the Southern Pacific Railroad of California," and under and in pursuance of the rules and regulations prescribed by the commissioner of the general landoffice, hereby makes and files the following list of selections of public lands claimed by the said company as inuring to it, and to which it is entitled under and by virtue of the grants and provisions of the said acts of Congress, and the location of the line of route of the railroad and telegraph of said company; being in part for the second (2d) section fifty (50) miles) of the same, commencing at Spadra and ending at San Gorgonio, which said section of road and telegraph has been duly accepted by the President of the United States, as provided in the aforesaid acts and joint resolution of Congress. The selection being particularly described as follows.

JEROME MADDEN,
Land Agent of the Southern Pacific Railroad Company.

RAILROAD LIST. South of Base Line, and West of San Bernardino principal Meridian

No.	Part of Section	No. of Section	No. of Town.	No. of Range	Area Acres 100	Fees of Register and Receiver	Remarks.
10217	S. E. 1/4 of S. E. 1/4.	29	1 S.	1 W.	40 00	$ 2 00	
					Patented in Patent 42, Dec. 12, 1896.		

State of California,
City and County of San Francisco. } ss.

I, Jerome Madden, being duly sworn, depose and say that I am the land agent of the Southern Pacific Railroad Company; that the foregoing list of lands which I hereby select is a correct list of a portion of the public lands claimed by the said Southern Pacific Railroad Company as inuring to it, to aid in the construction of the railroad of said Company from Sparda to San Gorgonio, for which a grant of lands was made by the acts of Congress approved March 3, 1871, July 27, 1866, July 25, 1868, and June 28, 1870, as aforesaid; that the said lands are vacant, unappropriated, and are not interdicted mineral nor reserved lands, and are of the character contemplated by the grant, being within the limits of twenty (20) miles on each side of the line of route for a continuous distance of fifty (50) miles, being for the second (2d) section of said road, starting from a point in N. E. ¼, sec. 27, T. 1 S., R. 9 W., S. B. B. M., and ending at a point in S. W. ¼, sec. 4, T. 3 S., R. 1 W., S. B. B. and M.

JEROME MADDEN. [Seal]

Sworn to and subscribed before me this 8th day of November, 1889. Witness my hand and notarial seal.

[Seal of James J. Green, Notary Public, City and County of San Francisco, Cal.]

JAMES J. GREEN,
Notary Public in and for the City and County of San Francisco, in the State of California.

United States Landoffice.

Los Angeles, Cal., November 25th, 1889.

We hereby certify that we have carefully and critically examined the foregoing list of lands claimed by the Southern Pacific Railroad Company, under the grant to the said Southern Pacific Railroad Company, by acts of Congress, approved March 3, 1871, July 27, 1866, July 25, 1868, and June 28, 1870, above mentioned, and selected by Jerome Madden the duly authorized agent; and we have tested the accuracy of said list by the plats and records of this office, and that we find the same to be correct; and we further certify that the filing of said list is allowed and approved, and that the whole of said lands are surveyed public lands of the United States, and within the limit of twenty (20) miles on each side; and that the same are not, nor is any part thereof, returned and denominated as mineral land or lands, nor claimed as swamp lands; nor is there any homestead, pre-emption, State, or other valid claim to any portion of said lands on file or record in this office.

We further certify that the foregoing list shows an assessment of the fees payable to us allowed by the Act of Congress, approved July 1, 1864, and contemplated by the circular of instructions dated January 24, 1867, addressed by the commissioner of the general landoffice to registers and receivers of the United States landoffices; and that the said company have paid to the undersigned.

the receiver, the full sum of two dollars ($2.00), in full payment and discharge of said fees.

H. W. PATTON,
Register.

J. H. POLK,
Receiver.

In the Circuit Court of the United States, Ninth Circuit, Southern District of California.

THE UNITED STATES, Complainants, vs. THE SOUTHERN PACIFIC RAILROAD COMPANY, D. O. MILLS et al., Defendants.	Consolidated Nos. 675, 587, and 662.

Certificate of Special Examiner.

I certify that I have compared the foregoing document with the original document entitled "List No. 49 Lands Selected by the Southern Pacific Railroad Company, Granted Limits," marked "Defendants' Exhibit No. 51" in the above cause, and find it to be a correct copy of said original, in so far as it describes lands which are shown on Exhibit "A," attached to the answer, not to

have been patented to the company, and of the certificates attached thereto.

San Francisco, Cal., January 18th, 1898.

STEPHEN POTTER,

Special Eaminer.

[Endorsed]: U. S. vs. S. P. Cons*d*. 675, 587, and 662. Copy of Defendants' Exhibit No. 51.

Defendants' Exhibit No. 52.

United States Landoffice.

Los Angeles, California.

October 26, 1891.

LIST NO. 64.

LANDS SELECTED.

By the

SOUTHERN PACIFIC RAILROAD COMPANY.

Granted Limits.

Branch Line.

Office of the Southern Pacific Railroad Company,

San Francisco, California.

I, Joseph L. Willcutt, secretary of the Southern Pacific Railroad Company, do hereby certify that Jerome Madden

was appointed land agent of the said Southern Pacific Railroad Company by the board of directors of said company, at a meeting held on the tenth (10th) day of May, A. D. 1876, and that since that time he has been continuously, and is now, the land agent of the said Southern Pacific Railroad Company.

In testimony whereof, I have hereunto set my hand and affixed the corporate seal of the said Southern Pacific Railroad Company, the 16th day of October, A. D. 1891.

[Seal of Southern Pacific Railroad Company.]

JOSEPH L. WILLCUTT,
Secretary of the Southern Pacific Railroad Company.

LIST OF LANDS

in the

Los Angeles Land District, California,

SELECTED BY THE

SOUTHERN PACIFIC RAILROAD,

of California.

The undersigned, the duly authorized land agent of the Southern Pacific Railroad Company of California, under and by virtue of the 23d section of the act of Congress, approved March 3, 1871, entitled "An act to incorporate the Texas Pacific Railroad Company, and to aid in the construction of its road, and for other purposes," and under and by virtue of the act of Congress, approved July 27, 1866, entitled "An act granting lands to aid in the

construction of a railroad and telegraph line from the States of Missouri and Arkansas to the Pacific Coast," and the further act, approved July 25, 1868, entitled "An act to extend the time for the construction of the Southern Pacific Railroad in the State of California," and the joint resolution of Congress, approved June 28, 1870, "concerning the Southern Pacific Railroad of California," and under and in pursuance of the rules and regulations prescribed by the commissioner of the general landoffice, hereby makes and files the following list of selections of public lands claimed by the said company as inuring to it, and to which it is entitled under and by virtue of the grants and provisions of the said acts of Congress, and the location of the line of route of the railroad and telegraph of said company; being in part for the second (2nd) and third (3d) sections (one hundred (100) miles) of the same, commencing at Spadra and ending at Indian Wells (Indio), which said sections of road and telegraph have been duly accepted by the President of the United States, as provided in the aforesaid acts and joint resolution of Congress. The selections being particularly described as follows:

JEROME MADDEN,
Land Agent of the Southern Pacific Railroad Company.

State of California,
City and County of San Francisco. } ss.

I, Jerome Madden, being duly sworn, depose and say that I am the land agent of the Southern Pacific Railroad Company; that the foregoing list of lands which I hereby select is a correct list of a portion of the public lands

claimed by the said Southern Pacific Railroad Company as inuring to it, to aid in the construction of the railroad of said company from Spadra to Indian Wells (Indio) for which a grant of lands was made by the acts of Congress approved March 3, 1871, July 27, 1866, July 25, 1868, and June 28, 1870, as aforesaid; that the said lands are vacant, unappropriated, and are not interdicted mineral nor reserved lands, and are of the character contemplated by the grant, being within the limits of twenty (20) miles on each side of the line of route for a continuous distance of one hundred (100) miles, being for the second (2d) and third (3d) sections of said road, starting from a point in the northeast quarter of section 27, township 1 south, range 9 west, S. B. B. and M., and ending at a point in the southwest quarter of section 24, township 5 south, range 7 east., S. B. B. and M.

JEROME MADDEN. [Seal]

Sworn to and subscribed before me this seventeenth (17th) day of October, 1891. Witness my hand and notarial seal.

[Seal of E. Black Ryan, Notary Public. City and County of San Francisco, Cal.]

E. B. RYAN,

Notary Public in and for the City and County of San Francisco, in the State of California.

United States Landoffice.

Los Angeles, Cal., October 26, 1891.

We hereby certify that we have carefully and critically examined the foregoing list of lands claimed by the

Southern Pacific Railroad Company, under the grant to the said Southern Pacific Railroad Company, by acts of Congress, approved March 3, 1871, July 27, 1866, July 25, 1868, and June 28, 1870, above mentioned and selected by Jerome Madden, the duly authorized agent, and we have tested the accuracy of said list by the plats and records of this office, and that we find the same to be correct; and we further certify that the filing of said list is allowed and approved, and that the whole of said lands are surveyed public lands of the United States, and within the limit of twenty (20) miles on each side; and that the same are not, nor is any part thereof, returned and denominated as mineral land or lands, nor claimed as swamp lands; nor is there any homestead, pre-emption, State, or other valid claim to any portion of said lands on file or record in this office, except as noted on list.

We further certify that the foregoing list shows as assessment of the fees payable to us allowed by the act of Congress, approved July 1, 1864, and contemplated by the circular of instructions dated January 24, 1867, addressed by the commissioner of the general landoffice to registers and receivers of the United States landoffices, and that the said company have paid to the undersigned, the receiver, the full sum of one hundred and fifty-seven ($157.00) dollars in full payment and discharge of said fees.

W. H. SEAMANNS,
Register.

G. W. BRYANT,
Receiver.

United States Surveyor General's Office.

San Francisco, California, October 20, 1891.

I, Wm. H. Pratt, surveyor general for the United States, in and for the State of California, hereby report and certify that the Southern Pacific Railroad Company has this day filed with me at San Francisco, a duplicate certificate of deposit No. 81, dated October 19th, 1891, to the credit of the United States, showing that the sum of $423.60 has been deposited as cost of survey, and $141.20 for office work, and that the said sums are the correct amount of the cost of survey and office work for the lands mentioned and described in the list of lands hereto annexed, to the extent of said list.

Survey	$423.60
Office work	141.20
	$564.80

In testimony whereof, I have hereunto set my hand and official seal.

[Seal of Surveyor General's Office, California.]

WM. H. PRATT,
Surveyor General.

San Francisco, Cal., October 16, 1891.

The Southern Pacific Railroad Company pays, under protest, the expense of surveying the lands described in the within list, as it claims to be exempt from such payment by provisions of the grant of lands to it by Congress.

JEROME MADDEN,
Land Agent So. Pac. R. R. Co.

In the Circuit Court of the United States, Ninth Circuit, Southern District of California.

THE UNITED STATES,
Complainants,
vs.
THE SOUTHERN PACIFIC RAILROAD COMPANY, D. O. MILLS et al.,
Defendants.

Consolidated Nos. 675, 587, and 662.

Certificate of Special Examiner.

I certify that I have compared the foregoing document with the original document entitled "List No. 64, Lands Selected by the Southern Pacific Railroad Company, Granted Limits," marked "Defendants' Exhibit No. 52" in the above cause, and find it to be a correct copy of said original, in so far as it describes lands which are shown on Exhibit "A," attached to the answer, not to have been patented to the company, and of the certificates attached thereto.

San Francisco, Cal., January 18, 1898.

STEPHEN POTTER,
Special Examiner.

[Endorsed]: U. S. vs. S. P. Consd. 675, 587, and 662, Copy of Defendants' Exhibit No. 52.

Defendants' Exhibit No. 53.

United States Landoffice.

Los Angeles, California.

1892.

LIST NO. 70.

LANDS SELECTED

by the

SOUTHERN PACIFIC RAILROAD COMPANY.

Granted Limits.

Branch Line.

Office of the Southern Pacific Railroad Company.

San Francisco, California.

I, Joseph L. Willcutt, secretary of the Southern Pacific Railroad Company, do hereby certify that Jerome Madden was appointed land agent of the said Southern Pacific Railroad Company by the board of directors of said company, at a meeting held on the tenth (10) day of May, A. D. 1876, and that since that time he has been continuously and is now the land agent of the said Southern Pacific Railroad Company.

In testimony whereof, I have hereunto set my hand and affixed the corporate seal of the said Southern Pacific Railroad Company, the 11th day of April, A. D. 1892.

[Seal of Southern Pacific Railroad Company.]

JOSEPH L. WILLCUTT,
Secretary of the Southern Pacific Railroad Company.

LIST OF LANDS

in the

Los Angeles Land District, California,

SELECTED BY THE

SOUTHERN PACIFIC RAILROAD COMPANY

of California.

The undersigned, the duly authorized land agent of the Southern Pacific Railroad Company of California, under and by virtue of the 23d section of the act of Congress, approved March 3, 1871, entitled "An act to incorporate the Texas Pacific Railroad Company, and to aid in the construction of its road, and for other purposes," and under and by virtue of the act of Congress, approved July 27, 1866, entitled "An act granting lands to aid in the construction of a railroad and telegraph line from the States of Missouri and Arkansas to the Pacific coast," and the

further act, approved July 25, 1868, entitled "An act to extend the time for the construction of the Southern Pacific Railroad in the State of California," and the joint resolution of Congress, approved June 28, 1870, "concerning the Southern Pacific Railroad of California," and under and in pursuance of the rules and regulations prescribed by the commissioner of the general landoffice, hereby makes and files the following list of selections of public lands claimed by the said company as inuring to it, and to which it is entitled under and by virtue of the grants and provisions of the said acts of Congress, and the location of the line of route of the railroad and telegraph of said company; being in part for the second (2d) section (fifty (50) miles) of the same, commencing at Spadra and ending at San Gorgonio, which said section of road and telegraph have been duly accepted by the President of the United States, as provided in the aforesaid acts and joint resolution of Congress. The selections being particularly described as follows. JEROME MADDEN,

Land Agent of the Southern Pacific Railroad Company.

RAILROAD LIST. North of Base Line, and West of San Bernardino principal Meridian.

No.	Part of Section	No. of Section	No. of Town.	No. of Range	Area. Acres	Area. 100	Fees of Register and Receiver		Remarks
	E. ½	3	1 N.	2. W.	320.	00			Unsurveyed.
	All	1	1 N.	3. W.	640.	00			Do.
	All	7	"	"	640.	00			Do.

State of California,
City and County of San Francisco. } ss.

I, Jerome Madden, being duly sworn, depose and say that I am the land agent of the Southern Pacific Railroad Company; that the foregoing list of lands which I hereby select is a correct list of a portion of the public lands claimed by the said Southern Pacific Railroad Company as inuring to it, to aid in the construction of the railroad of said company from Spadra to San Gorgonio, for which a grant of lands was made by the acts of Congress approved March 3, 1871, July 27, 1866, July 25, 1868, and June 28, 1870, as aforesaid; that the said lands are vacant, unappropriated, and are not interdicted mineral nor reserved lands, and are of the character contemplated by the grant, being within the limits of twenty (20) miles on each side of the line of route for a continuous distance of fifty (50) miles, being for the second (2d) section of said road, starting from a point in the northeast quarter of section 27, township 1 south, range 9 west, S. B. B. and M., and ending at a point in the southwest quarter of section 4, township 3 south, range 1 west, S. B. B. and M.

JEROME MADDEN. [Seal]

Sworn to and subscribed before me this eleventh (11th) day of April, 1892. Witness my hand and notarial seal.

[Seal of E. Black Ryan, Notary Public. City and County of San Francisco, Cal.]

E. B. RYAN,
Notary Public in and for the City and County of San Francisco, in the State of California.

United States Landoffice.

Los Angeles, Cal., ————, 1892.

We hereby certify that we have carefully and critically examined the foregoing list of lands claimed by the Southern Pacific Railroad Company, under the grant to the said Southern Pacific Railroad Company, by acts of Congress, approved March 3, 1871, July 27, 1866, July 25, 1868, and June 28, 1870, above mentioned, and selected by Jerome Madden, the duly authorized agent; and we have tested the accuracy of said list by the plats and records of this office, and that we find the same to be correct; and we further certify that the filing of said list is allowed and approved, and that the whole of said lands are surveyed public lands of the United States, and within the limit of twenty (20) miles on each side; and that the same are not, nor is any part thereof, returned and denominated as mineral land or lands nor claimed as swamp lands; nor is there any homestead, pre-emption, State, or other valid claim to any portion of said lands on file or record in this office.

We further certify that the foregoing list shows an assessment of the fees payable to us allowed by the act of Congress, approved July 1, 1864, and contemplated by the circular of instructions dated January 24, 1867, addressed by the commissioner of the general landoffice to registers

and receivers of United States landoffices; and that the said company have paid to the undersigned, the receiver, the full sum of thirty-two ($32.00) dollars, in full payment and discharge of said fees.

_____,
Register.

_____,
Receiver.

San Francisco, Cal., April 11, 1892.

The Southern Pacific Railroad Company pays, under protest, the expense of surveying the lands selected in the within list, because it claims to be exempt from such payment by provisions of the grant of lands to it by Congress.

JEROME MADDEN,
Land Agent Southern Pacific R. R. Co.

United States Surveyor General's Office.

San Francisco, California, April 11, 1892.

I, Wm. H. Pratt, surveyor general for the United States, in and for the State of California, hereby report and certify that the Southern Pacific Railroad Company has this day filed with me, at San Francisco, a duplicate certificate of deposit No. 195, dated April 11, 1892, to the credit of the United States, showing that the sum of $86.40 has been deposited as cost of survey, and $28.80 for office work, and that the said sums are the correct amount of the cost of survey and office work for the lands mentioned and described in the list of lands hereto annexed, to the extent of said list.

Survey	$86.40
Office work	28.80
	$115.20

In testimony whereof, I have hereunto set my hand and official seal.

[Seal of Surveyor General's Office, California.]

WM. H. PRATT,
Surveyor General.

In the Circuit Court of the United States, Ninth Circuit, Southern District of California.

THE UNITED STATES, Complainants,

vs.

THE SOUTHERN PACIFIC RAILROAD COMPANY, D. O. MILLS et al., Defendants.

Consolidated Nos. 675, 587, and 662.

Certificate of Special Examiner.

I certify that I have compared the foregoing document with the original document entitled "List No. 70, Lands Selected by the Southern Pacific Railroad Company, Granted Limits," marked "Defendants' Exhibit No. 53," in the above cause, and find it to be a correct copy of said original, in so far as it describes lands which

are shown on Exhibit "A," attached to the answer, not to have been patented to the company, and of the certificates attached thereto.

San Francisco, Cal., January 18th, 1898.

STEPHEN POTTER,
Special Examiner.

[Endorsed]: U. S. vs. S. P. Consd. 675, 587, and 662. Copy of Defendants' Exhibit No. 53.

Defendants' Exhibit No. 54.

United States Landoffice,

Los Angeles, California,

May 21st, 1896.

LIST NO. 89.

LANDS SELECTED

by the

SOUTHERN PACIFIC RAILROAD COMPANY.

Granted Limits.

Branch Line.

Office of the Southern Pacific Railroad Company,
San Francisco, California.

I, Joseph L. Willcutt, Secretary of the Southern Pacific Railroad Company, do hereby certify that Jerome Madden was appointed land agent of the said Southern

Pacific Railroad Company by the board of directors of said company, at a meeting held on the tenth (10th) day of May, A. D. 1876, and that since that time he has been continuously, and is now, the land agent of the said Southern Pacific Railroad Company.

In testimony whereof, I have hereunto set my hand and affixed the corporate seal of the said Southern Pacific Railroad Company, the 16th day of May, A. D. 1896.

[Seal of the Southern Pacific Railroad Company.]

JOSEPH L. WILLCUTT,
Secretary of the Southern Pacific Railroad Company.

LIST OF LANDS

of the

Los Angeles Land District, California,

SELECTED BY THE

SOUTHERN PACIFIC RAILROAD COMPANY

of California.

The undersigned, the duly authorized land agent of the Southern Pacific Railroad Company of California, under and by virtue of the 23d section of the act of Congress, approved March 3, 1871, entitled "An act to incorporate the Texas Pacific Railroad Company, and to aid in the construction of its road, and for other purposes," and under and by virtue of the act of Congress,

approved July 27, 1866, entitled "An act granting lands to aid in the construction of a railroad and telegraph line from the States of Missouri and Arkansas to the Pacific Coast," and the further act, approved July 25, 1868, entitled "An act to extend the time for the construction of the Southern Pacific Railroad in the State of California," and the joint resolution of Congress, approved June 28, 1870, "concerning the Southern Pacific Railroad of California," and under and in pursuance of the rules and regulations prescribed by the commissioner of the general landoffice, hereby makes and files the following list of selections of public lands claimed by the said company as inuring to it, and to which it is entitled under and by virtue of the grants and provisions of the said acts of Congress, and the location of the line of route of the railroad and telegraph of said company, being in part for the first (1st), second (2d), and third (3d) sections (one hundred and fifty (150) miles) of the same, commencing at San Fernando and ending at Indian Wells (Indio), which said sections of road and telegraph have been duly accepted by the President of the United States, as provided in the aforesaid acts and joint resolution of Congress. The selections being particularly described as follows:

JEROME MADDEN,
Land Agent of the Southern Pacific Railroad Company.

State of California,
City and County of San Francisco. } ss.

I, Jerome Madden, being duly sworn, depose and say that I am the land agent of the Southern Pacific Railroad Company; that the foregoing list of lands which I hereby

select is a correct list of a portion of the public lands claimed by the said Southern Pacific Railroad Company as inuring to it, to aid in the construction of the railroad of said company from San Fernando to Indian Wells (Indio), for which a grant of lands was made by the acts of Congress approved March 3, 1871, July 27, 1866, July 25, 1868, and June 28, 1870, as aforesaid; that the said lands are vacant, unappropriated, and are not interdicted mineral nor reserved lands, and are of the character contemplated by the grant, being within the limits of twenty (20) miles on each side of the line of route for a continuous distance of one hundred and fifty (150) miles, being for the first (1st) second (2d), and third (3d) sections of said road, starting from a point in N. W. ¼, sec. 3, T. 2 N., R. 15 W., S. B. M., and ending at a point in S. W. ¼, sec. 24, T. 5 S., R. 7 E., S. B. B. and M.

JEROME MADDEN. [Seal]

Sworn to and subscribed before me this sixteenth (16th) day of May, 1896. Witness my hand and notarial seal.

[Seal of E. Black Ryan, Notary Public, City and County of San Francisco, Cal.]

E. B. RYAN,
Notary Public in and for the City and County of San Francisco, State of California.

San Francisco, Cal., May 16th, 1896.

The Southern Pacific Railroad Company pays, under protest, the expense of suveying the lands selected in the within list, because it claims to be exempt from such payment by provisions of the grant of lands to it by Congress.

JEROME MADDEN,
Land Agent Southern Pacific R. R. Co.

United States Surveyor General's Office,
San Francisco, California, May 16th, 1896.

I, W. S. Green, surveyor general for the United States, in and for the State of California, hereby report and certify that the Southern Pacific Railroad Company has this day filed with me, at San Francisco, a duplicate certificate of deposit No. 342, dated May 16, 1896, to the credit of the United States, showing that the sum of $977.19 has been deposited as cost of survey, and $325.73 for office work, and that the said sums are the correct amount of the cost of survey and office work for the lands mentioned and described in the list of lands hereto annexed, to the extent of said list.

Survey.....	$977.19
Office work	$325.73
Total,	$1,302.92

In testimony whereof, I have hereunto set my hand and official seal.

[Seal of Surveyor General's Office, California.]

W. S. GREEN,
Surveyor General.

United States Landoffice.
Los Angeles, Cal., May 21st, 1896.

We hereby certify that we have carefully and critically examined the foregoing list of lands claimed by the Southern Pacific Railroad Company, under the grant to the said Southern Pacific Railroad Company, by acts of

Congress approved March 3, 1871, July 27, 1866, July 25, 1868, and June 28, 1870, above mentioned, and selected by Jerome Madden, the duly authorized agent; and we have tested the accuracy of said list by the plats and records of this office, and that we find the same to be correct; and we further certify that the filing of said list is allowed and approved, and that the whole of said lands are surveyed public lands of the United States, and within the limit of twenty (20) miles on each side; and that the same are not, nor is any part thereof, returned and denominated as mineral land or lands, nor claimed as swamp lands; nor is there any homestead, pre-emption, State, or other valid claim to any portion of said lands on file or record in this office.

We further certify that the foregoing list shows an assessment of the fees payable to us allowed by the act of Congress, approved July 1, 1864, and contemplated by the circular of instructions dated January 24, 1867, addressed by the commissioner of the general landoffice to registers and receivers of the United States landoffices, and that the said company have paid to the undersigned, the receiver, the full sum of three hundred and sixty-two ($362.00) dollars, in full payment and discharge of said fees.

Q. J. BOLTON,
Register.

ENOCH KNIGHT,
Receiver.

In the Circuit Court of the United States, Ninth Circuit, Southern District of California.

THE UNITED STATES, Complainants, vs. THE SOUTHERN PACIFIC RAILROAD COMPANY, D. O. MILLS et al., Defendants.	Consolidated Nos. 675, 587 and 662.

Certificate of Special Examiner.

I certify that I have compared the foregoing document with the original document entitled "List No. 89, Lands Selected by the Southern Pacific Railroad Company, Granted Limits," marked "Defendants' Exhibit No. 54" in the above cause, and find it to be a correct copy of said original, in so far as it describes lands which are shown on Exhibit "A," attached to the answer, not to have been patented to the company, and of the certificates attached thereto.

San Francisco, Cal., January 18, 1898.

STEPHEN POTTER,
Special Examiner.

[Endorsed]: U. S. vs. S. P. Cons*d*. 675, 587 and 662. Copy of Defendant's Exhibit No. 54.

Defendants' Exhibit No. 55.

(4-83-250.)

Date. This indenture made and entered into this first day of April, A. D. 1875, by and between the Southern Pacific Railroad Company, a railroad corporation, duly incorporated and organized under and in pursuance of the laws of the State of California, party of the first part, Trustees. and D. O. Mills and Lloyd Tevis, of the city and county of San Francisco, California, parties of the second part, witnesseth: That

Purpose of Mortgage. Whereas, the said party of the first part desires to complete the construction and equipment of its railroad and telegraph lines in the State of California, running from the city of San Francisco in a southerly and southeasterly direction by way of Carnadero Junction, Salinas Valley and Polonio Pass to the Colorado river, at or near the "Needles"; also from Carnadero Junction to San Benito; also from Los Gatos creek via Goshen, to the junction Route of railroad. with the first-mentioned line between Poso creek and Kern river; also from the junction near Tehachapi Pass via Los Angeles to the

Texas Pacific Railroad near Fort Yuma; and also from Los Angeles to Wilmington on San Pedro Bay, aggregating eleven hundred and fifty miles of railroad and telegraph line, and to cancel its present bonded indebtedness for construction secured by a mortgage heretofore made and bearing date November first, eighteen hundred and seventy, and to that end intends and is about to issue its first mortgage bonds upon said railroad and telegraph line, and its rolling stock, fixtures, and franchises, and also upon the lands granted to it by Congress, by the act of Congress entitled, "An act granting lands to aid in the construction of a railroad and telegraph line from the States of Missouri and Arkansas to the Pacific Coast," approved July twenty-seventh, eighteen hundred and sixty-six, and the act entitled, "An act to incorporate the Texas Pacific Railroad Company, and to aid in the construction of its road, and for other purposes," approved March third, eighteen hundred and seventy-one, not sold or otherwise disposed of prior to the execution of this mortgage, aggregating as near as can be estimated eleven millions of acres; and

Property Mortgaged includes land grants.

Whereas, heretofore, to wit, on the nineteenth day of December, A. D. eighteen hundred and seventy-four, the board of directors of said company, pursuant to the statute of the State of California, in such cases made and

provided, at a meeting of said board, at which all the members thereof were present, did, by a resolution to that effect, which was unanimously adopted and passed, determine and direct that first mortgage bonds upon said railroad and telegraph line, its rolling stock, fixtures and franchises, and upon said hereinbefore described lands, to the number of forty-eight thousand (forty-four thousand of which shall be for one thousand dollars each, and four thousand of which shall be for the sum of five hundred dollars each), in seven series to be designated by the letters of the alphabet, commencing with the letter "A," and followed by the succeeding letters in regular order to the letter "G," both inclusive, be prepared, executed and issued by the president and secretary of said company. Series "A" to consist of thirteen thousand bonds for one thousand dollars each, numbered from one to thirteen thousand, both inclusive, and four thousand bonds for five hundred dollars each, numbered from thirteen thousand and one to seventeen thousand, both inclusive. Series "B" to "F," both inclusive, consisting each of five thousand bonds, for one thousand dollars each, numbered from seventeen thousand and one to forty-one thousand, both inclusive, and series "G," consisting of six thousand bonds for one thousand dollars each, numbered from forty-two thousand and one to forty-eight

Board of Directors authorize Mortgage to be made.

Description of Bonds.

thousand, both inclusive. All of said bonds being payable thirty years after date, with interest at the rate of six per centum per annum, payable semiannually. The said series "A" to bear date April first, eighteen hundred and seventy-five, and the said several succeeding series to bear such dates respectively as the board of directors of said company may direct; all of said bonds aggregating the sum of forty-six millions of dollars; and

Whereas, the said board of directors, at the meeting aforesaid, and in the manner and form and by the vote aforesaid, did further resolve, that the said series "A" of said bonds should be executed and issued in substantially the following form, and that the succeeding series of said bonds should be in a similar form, with the necessary changes to conform to said resolutions or orders, which form is as follows, to wit:

The United States of America:

$1,000 in United States Gold Coin — In United States, $1,000 Gold Coin

Form of bond.

(Vignette)

First Mortgage Bond.

No. .... Series "A."

The Southern Pacific Railroad Company (of California), for value received, promises to pay

Rate of interest.

one thousand dollars to Mark Hopkins, or bearer, in the city of New York, thirty years from the date hereof, with interest thereon at

the rate of six per centum per annum from said date, payable semiannually on the first day of October next ensuing, and on the first day of April and October in each year thereafter, in the city of New York, on presentation and surrender of the respective coupons hereunto annexed, both principal and interest payable in United States gold coin at par, dollar for dollar.

This bond is one of series "A" of the first mortgage bonds issued and to be issued by the said Southern Pacific *Pacific* Railroad Company in seven series designated respectively by the letters of the alphabet, commencing with "A" and ending with "G," both inclusive. Series "A," consisting of thirteen thousand bonds for one thousand dollars each, numbered from one to thirteen thousand, both inclusive, and four thousand bonds for five hundred dollars each, numbered from thirteen thousand and one to seventeen thousand, both inclusive. Series "B" to "F," both inclusive, consisting each of five thousand bonds for one thousand dollars each, numbered from seventeen thousand and one to forty-two thousand, both inclusive, and series "G," consisting of six thousand bonds for one thousand dollars each, numbered from forty-two thousand and one to forty-eight thousand, both inclusive. All of said bonds being payable thirty years after their respective date, with the interest at the

Series.

rate of six per centum per annum, payable semiannually.

Dates. The said series "A" to bear date April first, eighteen hundred and seventy-five, and the said several succeeding series to bear such dates respectively as the board of directors of said company may direct; all of said bonds aggregating the sum of forty-six millions of dollars.

No preference by reason of priority. The holder of any of such bonds is to have no preference over any other holder of any of said bonds by reason of any priority in date or the time of issuing the same or otherwise.

All of said bonds are secured by a mortgage or deed of trust bearing even date with the bonds constituting series "A," duly executed by said company to D. O. Mills and Lloyd Tevis, San Francisco, California, as trustees, upon its railroad and telegraph lines in the State of California, running from the city of San Francisco in a southerly and southeasterly direction by way of Carnadero Junction, Salinas Valley and Polonio Pass to the Colorado river at or near the "Needles"; also from

How secured. Carnadero Junction to San Benito; also from Los Gatos creek via Goshen to the junction with the first-mentioned line between Poso creek and Kern river; also from the junction near Tehachapi Pass, via Los Angeles to the Texas Pacific Railroad near Fort Yuma, and also from Los Angeles to Wilmington on San

Pedro Bay, aggregating eleven hundred and fifty miles of railroad and telegraph line, with all the rolling stock, stations, fixtures and franchises for the permanent use thereof, and the appurtenances thereto now owned or held, or that may be hereafter required by said company for the permanent use of said railroad and telegraph lines.

Includes lands.

Also upon all the lands granted to said company by the Congress of the United States, to aid it in the construction of said railroad and telegraph lines, not sold or otherwise disposed of prior to the execution of said mortgage, aggregating, as near as can be estimated, eleven millions of acres.

In testimony whereof, the Southern Pacific Railroad Company has caused its corporate seal to be hereunto affixed, and these presents to be signed by its president and secretary this first day of April, in the year of our Lord one thousand eight hundred and seventy-five.

_____,

President.

_____,

Secretary.

And whereas, the said board of directors, at the meeting aforesaid, and in the manner and form, and by the vote aforesaid, did further direct that to each of said bonds there should be attached sixty interest coupons, numbered re-

spectively from one to sixty, inclusive, substantially in the following form, to wit:

Form of coupons.

$30 Series A

Southern Pacific Railroad Company of California.

Coupon. Bond No. ——. No. ——.

Thirty Dollars.

Interest due ———.

Payable in the City of New York in United States Gold Coin.

————————, Secretary.

with such changes in amount in the body and in the coupon as shall be necessary to conform to the order of the board of directors aforesaid, in regard to the several amounts or sums which are payable in each class of bonds; and

Whereas, by an act of Congress of the United States of America, approved on the twenty-seventh day of July, A. D. eighteen hundred and sixty-six, entitled, "An act granting lands to aid in the construction of a railroad and telegraph line from the States of Missouri and Arkansas to the Pacific Coast," there was granted to the said Southern Pacific Railroad Company, party of the first part, a large body of public lands of the United States, to wit: Every alternate section of public lands, designated by odd numbers, to the amount of ten alternate sections per mile on each side of the

railroad and telegraph line of said company running from the bay of San Francisco to the southeasterly line of the State of California, being about six hundred and thirty-six miles, not sold, reserved, granted, or otherwise appropriated, and free from pre-emption, homestead, or other claims or rights at the time the line of said road is designated by a plat thereof, filed in the office of the commissioner of the general landoffice and such other alternate sections designated by odd numbers as aforesaid, and situated not more than ten miles beyond the limits of the said first alternate sections, which may be selected by said company, in lieu of any of the sections first aforesaid which may have been sold, granted, reserved, pre-empted, occupied as homesteads, or otherwise disposed of, or to which other rights may have attached, as provided in the act of Congress aforesaid for the purpose of aiding in the construction of the railroad and telegraph line of the said party of the first part; and

U. S. Government Land grant.

Whereas, by an act of Congress of the U. S. of America, approved on the third day of March, eighteen hundred and seventy-one, entitled, "An act to incorporate the Texas Pacific Railroad Company, and to aid in the construction of its road, and for other purposes," there was granted to the said Southern Pacific Railroad Company the authority to construct a line of railroad from a point near Tehachapi

Act of Congress authorizing the company to construct lines to connect with Texas

Pacific Railroad and Atlantic and Pacific Railroad.

Pass, by way of Los Angeles, to the Texas Pacific Railroad, at or near the Colorado river, with the same rights, land grants and privileges, and subject to the same limitations, restrictions and conditions as were granted to and imposed upon the said Southern Pacific Railroad Company of California, by the aforesaid act of July twenty-seventh, eighteen hundred and sixty-six, before recited, subject to the rights, present and prospective, of the Atlantic and Pacific Railroad Company, which said last line of road is of the length of three hundred and fifty-six and seven one-hundredths miles; and

Whereas, the said board of directors, at the meeting aforesaid, and in the manner and form, and by the vote aforesaid, did further direct that, to secure the payment of said bonds,

Mortgage to be executed to trustees.

a first mortgage upon said road and its rolling stock, stations, fixtures, right of way and franchises, and the lands aforesaid granted by said acts of Congress, not sold or otherwise disposed of, or contracted to be sold, as shown by the books of said company, should be executed under the corporate seal of said company, and be signed by its president and secretary, to D. O. Mills and Lloyd Tevis, both of the city and county of San Francisco, State of California, as trustees for the holders of said bonds; and

Sinking fund $100,000 yearly, commencing 1882.

Whereas, said board of directors, at the meeting aforesaid, and in the manner and form, and by the vote aforesaid, did further direct that a sinking fund should be created for the redemption and payment of said bonds, by setting apart the sum of one hundred thousand dollars of the net income of said road in the year eighteen hundred and eighty-two, and each year thereafter until all of said bonds, principal and interest, shall have been redeemed or paid, in trust to be loaned out at interest, upon good securities, or otherwise invested under the order and direction of said board of directors, or used to redeem said bonds as often as one hundred thousand dollars shall come into the sinking fund, in which case notice shall be published in one paper in the city of San Francisco and two papers in New York City, that bonds will be redeemed at a price not exceeding their par value, and inviting bids for the surrender thereof at prices to be named, not exceeding the par value of said bonds; the lowest bids less than par to be accepted, and bonds redeemed to the extent of the money in the sinking fund:

Redemption of bonds.

Now, therefore, this indenture witnesseth, that the said Southern Pacific Railroad Company, for the better securing of the payment of the principal and interest of the said first mortgage bonds, and in consideration also of the sum of one dollar, to it in hand paid by the

Description of property conveyed to trustees.

said parties of the second part, the receipt whereof is hereby acknowledged, has granted, bargained, sold and aliened, conveyed and confirmed, and by these presents doth grant, bargain, sell, alien, convey and confirm unto the said parties of the second part, and to their successors duly appointed, for the execution of the trusts herein set forth, the following property now or hereafter constituted, purchased, acquired, held in possession and owned by said company, to wit: The whole of the railroad and telegraph line of the said company, running from the city of San Francisco, in the State of California, in a southerly and southeasterly direction, by way of Carnadero Junction, Salinas Valley and Polonio Pass, to the Colorado river, at or near the "Needles"; also, from Carnadero Junction to San Benito; also, from Los Gatos creek, via Goshen, to the junction with the first mentioned line, between Poso creek and Kern river; also, from the junction near Tehachapi Pass, via Los Angeles, to the Texas Pacific Railroad near Fort Yuma, and also from Los Angeles to Wilmington, on San Pedro Bay, aggregating eleven hundred and fifty miles of railroad and telegraph line, including all the rights of way, roadway, track and tracks, together with all the superstructures, depots, depot grounds, station houses, watering-places, work-shops, machine-shops, machinery, sidetracks, turn-

outs, turn-tables, weighing scales, locomotives, tenders, cars, rolling stock of all kinds, full equipments, fixtures, tools and all other property which may be necessarily or ordinarily used in operating or repairing the said railroad, including all of the said property, which is now or may hereafter, in whole or in part, be constructed or completed, purchased, acquired, held, or owned by the said company, pertaining to said railroad, and all the corporate rights, privileges and franchises of said company, pertaining to said road, together with all and singular the tenements, hereditaments, and appurtenances thereunto belonging and appertaining, and the reversion and reversions, remainder and remainders, rents, incomes, issues and profits thereof, with all the rights, titles, interests, estate, propety, succession, claim and demand, in law or equity, of the said party of the first part, of, in and to the same, or any part and parcel thereof; to have and to hold the above granted and described premises, property and franchises, with the appurtenances, unto the said parties of the second part, and to the survivor of them, and to their successors, duly appointed, upon trust and for the use and benefit of the person or persons, body or bodies, politic or corporate, who shall have become, or be from time to time, holders of the said "first mortgage bonds," or any of them. Pro-

vided, always, and these presents are upon the express condition that if the said party of the first part, or its successors, shall well and truly pay, or cause or procure to be paid unto the holders, from time to time, of said bonds, and each and every one of them, the said sums of money secured to be paid by the said bonds, and the interest coupons attached thereto, at the places and times, and in the manner set forth in the said bonds, according to the true intent and meaning thereof, then these presents, and all the property, estate, right, franchises, and privileges herein and hereby granted and conveyed, shall cease, determine and be void. But if default shall be made in the payment of the said sums of money specified in said bonds, or in the payment of said interest coupons, or either of them, or any part thereof, and if the same shall remain unpaid for the period of six months from and after the time when the same should have been paid, according to the terms of said bonds, then the said parties of the second part, or either of them, upon the refusal of the other, or their successors in said trust, by themselves, or their agents, or servants, in that behalf, may, upon request of the holder or holders of not less than one-fourth of said bonds, on which the interest or principal shall so be and have so remained in default, as aforesaid, enter into and upon and take possession of all, or in their

Proceedings in event of default in payment.

or his discretion, any part of the said premises and property hereinbefore described, and work and operate the said railroad, and receive the income, receipts and profits thereof, and out of the same pay: First, the expenses of running and operating the same, including therein such reasonable compensation as they or he may allow to the several persons employed or engaged in the running and superintendence of the same, and a reasonable compensation to the parties of the second part, or their successors, or such of them as shall act in the premises, for their or his care, diligence and responsibility in the premises. Second, the expenses of keeping the said road, the appurtenances, the locomotives and the rolling stock thereof in good and sufficient repair, to prevent deterioration in the value thereof, and all other reasonable and proper charges and expenses of the care and management thereof. And third, pay as far as the same will suffice, all interest and principal, if any, which may be due on said bonds; and in case of any deficiency to apply said receipts, after the payment of all said charges and expenses, to the payment thereof, ratably, without preference of any kind, or the said parties of the second part may in such case foreclose this mortgage, and sell and dispose of, according to law, all the rights, property, privileges, franchises, real and personal, with the appurtenances

herein and hereby granted, or so much thereof as may be necessary, and out of the money arising from such sale pay: First, the costs, and charges, and expenses of the foreclosure and sale, including therein reasonable counsel fees for conducting said proceedings, to be allowed and fixed by the Court, but not exceeding thirty thousand dollars. Second, any expenses, costs and charges of the execution of the trust previously incurred and remaining unpaid. Third, a reasonable compensation to the trustees, or one of them, who may act, for their or his care, trouble and service in completing the execution of his trust and the distribution of the proceeds of sale, to be fixed by the Court, but not exceeding twenty thousand dollars. And fourth, to distribute the residue of said proceeds among the holders of said bonds, in proportion to their several interests, until all have been paid in full, principal and accrued interests.

Proceeds from sale of depot lands, etc., not needed for such purpose may be sold and proceeds applied to redemption of bonds.

And the said party of the first part hereby covenants and agrees that if, at any time, any lands now used for depot or shop purposes, or right of way, or water, or any lands not now used, but which may be hereafter used for such purposes, shall, for any cause, cease to be needed or used by said party of the first part for such purposes, the said parties of the second part may sell the same at the price to be agreed upon by the parties of the first and second parts, and apply the money realized

from such sale or sales to the redemption of said bonds in the manner hereinafter provided, in the case of money realized from the sale of lands granted by the United States to the said party of the first part.

And the said party of the first part hereby agrees and covenants to and with the said parties of the second part, and their successors in said trust, that it will pay all ordinary and extraordinary taxes, assessments, and other public burdens and charges which shall or may be imposed upon the property herein described and hereby mortgaged, and every part thereof, and the said parties of the second part, the survivor of them, or their successors in said trust, or any one or more of the holders of said bonds, may in case of default of the said party of the first part in this behalf, pay and discharge the same, and any other lien or encumbrance upon said property, which may in any way, either in law or equity, be or become in effect a charge or lien thereon, prior to these presents, or to which this mortgage may be subject or subordinate, and for all payments thus made the parties so making the same shall be allowed interest thereon at the rate of seven per centum per annum, and such payments, with the interest thereon, shall be and are hereby secured to them by these presents, and declared to be payable and collectible in the same sort of currency or money

Company to pay all taxes, assessments, etc., or, in default, trustees may pay and receive 7% interest on such payments.

wherein they shall have been paid, and the same shall be payable by said party of the first part to said parties of the second part, upon demand in trust for the party or parties paying the same, and may be paid out of the proceeds of the sale of said property and franchises hereinbefore provided.

And the said party of the first part hereby further covenants and agrees to and with the said parties of the second part, and their successors in said trust, that they will at any and all times hereafter, upon the request of the said parties of the second part, execute, acknowledge and deliver to the said parties of the second part, all and every such further, necessary and reasonable conveyances and assurances, of the said premises or any part thereof, as may, by the parties of the second part, or the survivor of them, or his or their successors in the trust hereby created, be reasonably advised or required for more fully carrying into effect the objects of this conveyance, and the said parties of the second part, and their successors in said trust, shall be entitled to receive a just and proper compensation for all services rendered by them in the discharge of said trust, and the same shall be deemed to be secured hereby.

Will execute any further conveyances required.

Compensation to trustees.

And it is hereby stipulated and agreed that the said parties of the second part, and their successors in said trust, shall not be responsi-

ble for the acts or omissions of any agent or agents employed by him or them, in any manner, in and about the execution of the trust hereby created when such agent or agents are selected with reasonable discretion; or with the approbation, or with the knowledge and without the express disapprobation of said party of the first part, nor shall either of the said parties of the second part be responsible for any act or omission of the other in the execution of said trust.

Agents of trustees.

And, therefore, this indenture further witnesseth: That the said party of the first part, for the purpose of securing the payment of the sums of money mentioned in said bonds, and the interest thereon, and in consideration of the premises, and also for and in consideration of the sum of one dollar to the said party of the first part in hand paid by the parties of the second part, the receipt whereof is hereby acknowledged, has granted, bargained, sold, released, enfeoffed, conveyed and confirmed, and by these presents does grant, bargain, sell, release, enfeoff, convey, and confirm unto the said parties of the second part, as trustees, and to their successors and survivor, and their assigns forever,

Conveyance of land to trustees.

All and singular, the said several sections of land so as aforesaid granted by said acts of Congress, and also all the estate, right, title, interest, claim, and demand whatsoever,

at law or in equity, of, in, or to the same, or any part or parcel thereof, which the said party of the first part now has, holds, owns, or is entitled to, or hereafter may or shall acquire have, hold, own, or be, or become entitled to by force or virtue of the said acts of Congress; saving, excepting and reserving all parts and parcels of said lands which have been sold or contracted to be sold or disposed of heretofore, or which are or shall be included in the right of way of the said railroads and telegraph lines of the said company, as defined and granted by the acts of Congress aforesaid, or used for the construction or operation thereof, or for the track, yards, depot grounds, buildings or erections thereof.

Reserved lands.

To have and to hold all and singular the lands hereby granted or intended to be granted, and each and every part and parcel thereof, with the appurtenances thereunto belonging, unto the said parties of the second part, and their successors or survivor, and their assigns forever, as trustees, for the uses and purposes, and upon the trusts, terms, conditions, and agreements in this indenture set forth and declared.

Provided, always, and these presents are upon the express condition, that if the said party of the first part shall well and truly pay, or cause to be paid, to the holders of said bonds, and every of them, the principal sums

Lands shall revert to and vest in the S. P. R. R. if—

of money therein mentioned, according to the tenor thereof, with the interest thereon, at the times and in the manner hereinbefore provided, according to the true intent and meaning of these presents, then and from thenceforth this indenture and the estate hereby granted shall cease and determine, and all the right, title and interest in any and all property hereby conveyed to the parties of the second part, not then disposed of under the powers hereby conferred, shall revert to and vest in the said party of the first part.

This indenture further witnesseth, that these presents and the said bonds are made, executed and delivered upon the trusts, terms, conditions and agreements following, that is to say: That all the lands hereinabove conveyed and mortgaged shall be under the sole and exclusive management and control of the said party of the first part, who shall have full power and authority to make contracts for the sale of the same at such price, on such credit or terms of payment, and such other conditions as shall be agreed on by the said parties of the first and second parts, and as shall seem to them best calculated to secure the payment in full of all the bonds issued as hereinbefore provided, until entry or foreclosure by the trustees, as hereinafter provided. But no title to any tract of land, contracted to be sold by the said party of the first part, shall

Land to be under the control of S. P. R. R.

be given until the whole of the purchase money of said tract shall be paid to said parties of the second part, or their successors or survivor, in cash or in said bonds, or overdue coupons thereof. And for this purpose it is agreed that the said party of the first part and said trustees shall cause all such lands, as they shall from time to time become subject to sale, to be carefully examined and surveyed, and shall affix to each tract or parcel such price as in their judgment shall be most judicious, having in view the interests of all parties, and said lands shall be and remain at all times hereafter open for sale to any person who may desire to purchase and pay therefor; the prices being, nevertheless, at all times subject to revision and alteration by the said parties, and the party of the first part may reserve from sale any lands necessary for depot grounds, or other purposes connected with the construction or operation of the said railroad or telegraph.

Payments to be made to trustees.

Land to be graded, etc.

The purchaser of any such land shall be at liberty to pay for the same in the aforesaid bonds or overdue coupons at par; and when any tract or parcel of said lands shall have been purchased and paid for, either in bonds, coupons, or cash, as hereinbefore provided, the same shall be conveyed by the said parties of the first and second parts to the purchaser, in fee simple, and shall by such conveyance

Lands may be

paid for in bonds and overdue coupons.

be absolutely and forever released from any and all lien or incumbrance, for or on account of said bonds, or any other debt or obligation of the said party of the first part.

Trustees may convey land by power of attorney.

Provided, that for the sake of convenience in making said conveyances the said trustees shall have power to act by attorney, duly nominated and appointed by them, jointly, by letter of attorney, which shall be duly acknowledged and recorded in each and all of the counties in which said lands or any part thereof are situated; and all deeds made in their names by such attorney shall have the same force and effect as if made by them in person.

Residence of such attorney.

Provided, further, that the attorney so appointed shall be a resident of the city of San Francisco, in the State of California, and shall reside within convenient reach of the party of the first part.

Trustees to cancel bonds and coupons.

The said trustees shall and will cancel and discharge each and every bond and the coupons thereon, and all overdue coupons, which they may receive in payment for land, or by purchase, by defacing the seal of the corporation, perforating the signatures of the president and secretary, and drawing lines across each of the interest coupons, on receipt thereof; and all bonds and coupons received in payment for lands, as aforesaid, shall, when so canceled, be delivered to the said party of the part.

Proceeds of sales of lands shall be applied to the purchase of bonds.

The said trustees shall apply the proceeds of the sales made by them of lands hereby conveyed, to the sole and exclusive purpose of the payment of the bonds provided for in, and issued in conformity to, the terms of this indenture.

And for such purpose all such avails shall, from time to time, as the same are realized, be used in the purchase of such bonds in the market, to be canceled, so long as purchases thereof can be made at par; and whenever such bonds cannot be purchased at that rate, said trustees shall advertise for proposals to sell such bonds to them in two newspapers published in the city of New York, and one newspaper published in the city of San Francisco; and after receiving such proposals they shall have power to purchase such bonds at the lowest terms so offered.

How bonds shall be purchased.

The said party of the first part does hereby covenant and agree to pay to the holders of said bonds, respectively, the said principal sums of money therein mentioned and the interest thereof as aforesaid.

If any default shall be made in the payment either of principal or interest on any of said bonds for six months, after demand at the place of payment when the same shall become due, then the said trustees may, on being requested by the holders of at least one hundred thousand dollars of such bonds, enter into and

take possession of any of the lands above conveyed, and foreclose this mortgage, and may sell at public auction so much of said lands as may be necessary to discharge all arrears of such interest, and apply the proceeds, after deducting the costs, charges, and expenses of such entry, foreclosure and sale, to the payment of such arrears of interest. If any such default shall continue for one year from the time of such demand and refusal, the principal sum of all bonds then outstanding shall become due and payable, and the said trustees may enter into and take possession of all the lands above by these presents mortgaged or conveyed, foreclose this mortgage, and sell at public auction all said lands or so much thereof as may be necessary, first giving at least six months previous notice of the time and place of sale in at least one newspaper published in the city of New York, and in one published in each of the cities of San Francisco, Sacramento, Los Angeles and San Diego; and they shall apply the proceeds thereof, after deducting the costs, charges and expenses of such last-mentioned entry, foreclosure and sale, to the payment of all said bonds then outstanding, and the interest accrued thereon, rendering the surplus, if any there shall be, unto the said party of the first part. In case of any sale upon any such foreclosure or at any such public auction, the said trustees shall make, execute and deliver

In event of default in payments for six months, trustees may foreclose mortgage and dispose of lands at public auction sufficient to discharge all arrears.

a conveyance of the said lands so sold, which shall convey to the purchasers all the rights and privileges of the said party of the first part, in and to the property so sold, to the same extent as the same shall have been previously enjoyed and held by the said party of the first part.

If after any such entry shall be made or any such foreclosure proceedings shall be commenced for the satisfying of interest only, as above provided, and before the lands are sold thereon, the said party of the first part shall pay and discharge such interest and deliver the coupons therefor to the said trustees, and pay all the costs, charges and expenses incurred in such entry and foreclosure and the proceedings thereon, then and in every such case the said trustees shall discontinue their proceedings thereon, and restore to the said party of the first part all of such lands to be held subject to the above conveyance and mortgage, and subject to all the provisions, terms and conditions of these presents, in like manner as if such entry had not been made, nor such foreclosure proceedings commenced. In case a vacancy shall happen in the number of trustees, hereinbefore mentioned as parties of the second part in this indenture, or if one of them shall be temporarily absent, the remaining trustee shall, while said vacancy or absence exists, have all the rights, exercise all the

Foreclosure proceedings for interest to cease if interest is subsequently paid.

powers and discharge all the duties devolving on said trustee by said instrument. But as soon as it conveniently may be done, such vacancy shall be filled by the nomination by the remaining trustee of some proper person to fill such vacancy, which nomination shall be submitted to the board of directors of said company, and, if approved by them, the person so nominated and approved immediately shall become a trustee under this instrument. If said nomination is not approved, another person shall be nominated by said remaining trustee, and in like manner submitted for approval, and so on till three nominations shall have been made. But if three successive nominations shall be made, and none of them shall be approved by the board, said vacancy shall be filled by a committee of three persons, selected, one by said remaining trustee, one by said board of directors, and a third by the two thus selected, and the person appointed trustee by a majority of the committee shall be and remain a trustee under this instrument. And the person regularly appointed a trustee to fill a vacancy in either of the forms above specified shall from and after his said appointment, and his acceptance of the appointment, become vested with the same estates, powers, rights and interests, and charged with the same duties and responsibilities, as if he had been one of the original trustees, parties of the

How vacancy in trustees is to be filled.

second part, named in and executing this instrument; and the prior remaining trustee may and shall execute such conveyances and instruments as may be proper or necessary to vest the same in such new trustee jointly with him, or to furnish evidence of such vesting. If at any time either of the said trustees shall resign his place as trustee by a proper deed in writing to that effect, and such resignation shall be accepted by the said party of the first part, then, and in every such case, the place of such resigning trustee thereupon shall become and be vacant.

Reconveyance by trustees upon payment of bonds and interest.

Whenever all the bonds which shall have been made and issued by the said party of the first part under and in conformity to the provisions of this indenture, with the interest thereon, together with all the expenses incurred by the said trustees in the execution of the trust herein and hereby created, shall have been fully paid and satisfied, the said trustees shall reconvey to the said party of the first part all and singular the said lands then in the hands of the said trustees, and not before that time sold or disposed of, in the execution of the trust hereby created. In case the said trustees shall at any time have any trust moneys on hand, received from the sale of the lands hereby conveyed, which will not be required to meet any immediate liabilities of the company, to which said moneys are by these presents devoted, the

said moneys shall be loaned on interest, or deposited on interest, with some bank or trust company in the city of San Francisco or Sacramento, subject to be drawn by checks signed by the trustees or such one of them as they may designate. All of the books of the said company, and of the trustees, relating to the lands hereby conveyed, shall be mutually open to the inspection of said company and said trustees. It shall be the duty of the said trustees to certify and deliver to the said party of the first part the said bonds, as the same from time to time shall be demanded, issued or used by the said party of the first part.

Deposit of surplus moneys by trustees.

And it is hereby mutually agreed by and between the parties hereto that the said parties of the second part, and their survivor and successors, and their heirs, executors and administrators, shall not be answerable for the acts, omissions or defaults of each other, nor for anything short of their own gross negligence or willful misfeasance.

Responsibility of trustees.

It is hereby declared by the parties to this indenture, that all the provisions of said acts of Congress, so far as they are applicable, are hereby made and shall be deemed and taken to be a part of this instrument; and the said provisions in all that concerns the sale and disposal of the said lands hereby conveyed to the parties of the second part are to be observed and strictly and faithfully carried out and fulfilled.

Provisions of acts of Congress to be observed.

And the said party of the first part covenants and agrees to and with the said parties of the second part, that the said party of the first part shall and will, at any and all times hereafter, and from time to time, execute, acknowledge, and deliver, under its corporate seal, to the said parties of the second part, and their survivors and successors, all such other or further assurances, deeds, mortgages, obligations, transfers, indentures and instruments in writing, and shall and will do and perform all such other or further acts or things as shall or may be necessary or proper, or as their counsel, learned in the law, shall deem necessary, proper, or expedient for the better or more effectually securing upon the above conveyed and mortgaged premises the payment of the said bonds so to be issued, and the interest due and to grow due thereon in manner aforesaid, or for carrying into effect the true intent, design, objects, and purposes of these presents. And the said parties of the second part hereby accept the trust created and declared by this instrument, and agree to discharge the same pursuant to the provisions in that behalf herein contained.

Will execute further instruments if necessary to secure payments of bonds.

In witness whereof, the said Southern Pacific Railroad Company has caused these presents to be signed by its president and secretary, and sealed with its corporate seal, and the above parties of the second part have

hereunto set their hands and seal, the day and year first above written.

[Corporate Seal
S. P. R. R. Co.]

CHARLES CROCKER,
President Southern Pacific Railroad Company.

J. L. WILLCUTT,
Secretary Southern Pacific Railroad Company.

We accept the trust declared in the foregoing instrument.

D. O. MILLS, [Seal]
LLOYD TEVIS, [Seal]
Trustees.

State of California,
City and County of San Francisco. } ss.

On this third (3rd) day of July, in the year one thousand eight hundred and seventy-five (1875), before me, Charles J. Torberi, a notary public in and for the said city and county of San Francisco, State of California, duly commissioned and qualified, personally appeared Charles Crocker, known to me to be the president of the Southern Pacific Railroad Company, and J. L. Willcutt, known to me to be the secretary of the Southern Pacific Railroad Company, the corporation that executed the within instrument, and acknowledged to me that such corporation executed the same.

In witness whereof, I have hereunto set my hand and affixed my official seal this third day of July, A. D. 1875.

[Notarial Seal] CHARLES J. TORBERT,
Notary Public in and for the City and County of San Francisco, State of California.

State of California,
City and County of San Francisco. } ss.

I, Charles J. Torbert, a notary public in and for the said city and county of San Francisco, State of California, residing in the city of San Francisco, duly commissioned and sworn, do certify that on the sixth (6th) day of July, in the year one thousand eight hundred and seventy-five (1875), personally appeared before me in the city and county of San Francisco, State of California aforesaid, Charles Crocker, president of the Southern Pacific Railroad Company, and J. L. Willcutt, secretary of the Southern Pacific Railroad Company, who are both personally known to me to be the said officers of the said Southern Pacific Railroad Company, respectively, and the individuals described in and who have executed the foregoing instrument as such officers of said company, and they each severally and personally, then and there, acknowledged to me that they executed the said instrument as the free act and deed of the said Southern Pacific Railroad Company, freely and voluntarily, and for the uses and purposes therein mentioned; and the said J. L. Willcutt, with whom I am personally acquainted, being by me duly sworn, did depose and say that he resides in the city and county of San Francisco, State of California; that he is and was secretary of the Southern Pacific Railroad Company at the date and time he executed the foregoing instrument; that he knows the corporate seal of said company, and is and was at the date of said instrument the legal custodian of said seal; that the seal affixed to the foregoing instrument was and is such corporate seal, and

was by him so affixed by order of the board of directors of the said Southern Pacific Railroad Company; that he signed his name thereto as secretary of said company by the like order. And the said J. L. Willcutt further said that he was and is acquainted with Charles Crocker, and knows that said Charles Crocker is and was president of the Southern Pacific Railroad Company at the date of said instrument; that the signature of the said Charles Crocker subscribed to said instrument is in the genuine handwriting of the said Charles Crocker, and was thereto by him subscribed by the like order of the board of directors of said company, and in the presence of him, the said deponent.

In witness whereof, I have hereunto set my hand and affixed my official seal at my office in the city and county of San Francisco, State of California, the sixth day of July, A. D. 1875.

[Notarial Seal] CHARLES J. TORBERT,
Notary Public in and for the City and County of San Francisco, State of California.

State of California,
City and County of San Francisco. } ss.

On this seventh (7th) day of July, in the year one thousand eight hundred and seventy-five (1875), before me, Charles J. Torbert, a notary public in and for the said city and county of San Francisco, State of California, duly commissioned and qualified, personally appeared D. O. Mills and Lloyd Tevis, known to me to be the persons whose names are subscribed to the within instrument, and acknowledged to me that they executed the same.

In witness whereof, I have hereunto set my hand and affixed my official seal at my office in the city and county of San Francisco, State of California, this seventh day of July, A. D. 1875.

[Notarial Seal] CHARLES J. TORBERT,
Notary Public in and for the City and County of San Francisco, State of California.

Filed for record at the request of D. W. Parkhurst, and recorded in office of the county recorder of San Mateo county, July 8, 1875, at 5 P. M., in Liber 11 of Mortgages, at page 2 and following.

Witness my hand and seal of office.

Paid, $22.50.

[Seal] GEO. H. RICE,
County Recorder.
By W. R. Thomas,
Deputy.

Filed for record at the request of D. W. Parkhurst, July 9, A. D. 1875, at 9 o'clock and 26 minutes, A. M., and recorded in Book 15 of Mortgages, at page 156 et seq., Records of the County of Santa Clara, in the State of California.

Witness my hand and seal of office.

Paid, $15.

[Seal] W. J. COLAHAN,
County Recorder.
By F. J. Saxe,
Deputy.

Filed for record at the request of D. W. Parkhurst, July 9, A. D. 1875, at 8 o'clock and 53 minutes, P. M., and recorded in Book 1 of Mortgages, at page 586 and following, Records of San Benito County, in the State of California.

Witness my hand and seal of office.

Fees, $15, paid.

[Seal] H. M. HAYES,
County Recorder.

Filed for record at the request of D. W. Parkhurst, July 10, A. D. 1875, at 8 o'clock and 10 minutes, P. M., and recorded in volume 17, page 529 and following pages of the Mortgage Records of the County of Santa Cruz, in the State of California.

Witness my hand and seal of said county recorder.

Paid, $15.00.

[Seal] H. E. MAKINNEY,
County Recorder in and for Santa Cruz County.

Filed for record at the request of D. W. Parkhurst, July 12, A. D. 1875, at 9 o'clock and 55 minutes, A. M., and recorded in Book 1 of Mortgages, page 183 and following, Records of the County of Monterey, in the State of California.

Witness my hand and seal of office.

Fees, $15, pd.

[Seal] HERBERT MILLS,
County Recorder.

Filed for record at the request of D. W. Parkhurst, July 13, A. D. 1875, at six o'clock and 25 minutes, P. M., and recorded in Book "C" of Mortgages, page 540 et seq., Records of the County of San Luis Obispo, in the State of California.

Witness my hand and seal of office county recorder.

Fees, $15.

[Seal] CHAS. W. DANA,
County Recorder.

Filed for record at the request of D. W. Parkhurst, July 14, A. D. 1875, at 2 o'clock and 20 minutes, P. M., and recorded in Book "F" of Mortgages, pages 164 and following, Records of the County of Santa Barbara, in the State of California.

Witness my hand and seal of office of county recorder.

Fees, $15, pd.

[Seal] H. P. STONE,
County Recorder.
By J. O. B. Wentling,
Deputy.

Filed for record at the request of D. W. Parkhurst, July 16, A. D. 1875, at 8 o'clock and 40 minutes A. M., and recorded in Book 15 of Mortgages, page 600 et seq., Records of the County of Los Angeles, in the State of California.

Witness my hand and seal of office county recorder.
Fees, $15, pd.

[Seal] J. W. GILLETTE,
County Recorder.
By D. S. Lovejoy,
Deputy.

Filed for record at the request of D. W. Parkhurst, July 19, A. D. 1875, at nine o'clock and 15 minutes A. M., and recorded in Book Volume 2 of Mortgages, pages 217 and following, Records of the County of Kern in the State of California.

Witness my hand and seal of office.
Fees, $15, pd.

[Seal] F. W. CRAIG,
County Recorder.

Filed for record at the request of D. W. Parkhurst, Esq., July 20, A. D. 1875, at 8 o'clock and 15 minutes, P. M., and recorded in Book "D" of Mortgages, pp. 310 et seq., Records of the County of Fresno, in the State of California.

Witness my hand and seal of office of county recorder.
Pd. $15.

[Seal] A. M. CLARK,
County Recorder.
By C. L. Wainwright,
Deputy.

Filed for record at request of D. W. Parkhurst, July 21, A. D. 1875, at 10 o'clock and 30 minutes, A. M., and recorded in Book "K" of Mortgages, page 1 et seq., Records of the County of Tulare, in the State of California.

Witness my hand and seal of office of county recorder.

Pd. $15.

[Seal] J. E. DENNY,
Recorder.
By John G. Knox,
Deputy.

Filed for record at the request of D. W. Parkhurst, July 23, A. D. 1875, at 10 o'clock and 40 minutes, P. M., and recorded in Book "D" of Mortgages, 544 et seq., Records of the County of San Bernardino, in the State of California.

Witness my hand and seal of office of county recorder.

Pd. $15.

[Seal] SYDNEY P. WAITE,
County Recorder.
By R. S. Swing,
Deputy.

Filed for record at the request of D. W. Parkhurst, July 26, A. D. 1875, at 10 o'clock and 20 minutes, A. M., and recorded in Book No. 7 of Mortgages, pages 103 et seq., Records of the County of San Diego, in the State of California.

Witness my hand and seal of office of county recorder. Fees, $15.

[Seal]

A. S. GRANT,
County Recorder.
By E. G. Haight,
Deputy.

Filed for record at the request of D. W. Parkhurst, July 28, A. D. 1875, at 24 minutes past 4 P. M., and recorded in Book No. 2 of Mortgages, pages 46 et seq., Records of the County of Ventura, State of California.

Witness my hand and seal of office of county recorder. Fees, $18.

[Seal]

JOHN T. STOW,
County Recorder.

Recorded at request of D. W. Parkhurst, August 3, A. D. 1875, at 1 P. M., in Liber 443 of Mortgages, page 309, in the office of the county recorder of the city and county of San Francisco, State of California.

O. H. FRANK,
County Recorder.

Recorded at request of Wells, Fargo & Co., August 20, 1880, at 20 min. past 9 A. M., in Book 1 of Mortgages, page 557 et seq., Records of Merced County.

$15.

[Seal]

E. J. HAMILTON,
County Recorder.
By M. H. Walsh,
Deputy.

Recorded at request of Wells, Fargo & Co., August 23d, A. D. 1880, at 5 min. past 9 o'clock A. M., in Vol. 15 of Mortgages, at pages 139 et seq., Records of Stanislaus County.

$15 paid.

[Seal] JOHN McCOY,
Recorder.

Recorded at request of J. L. Willcutt, September 6th, 1880, at 30 min. past 10 o'clock A. M., in Liber 624 of Mortgages, page 305, in the office of the county recorder of the city and county of San Francisco, State of California.

[Seal] W. K. DIETRICH,
County Recorder.
Per Richard Blauvelt,
Deputy.

(Marked "Defendants' Exhibit before the Special Examiner No. 90, Stephen Potter, Special Examiner.")

I hereby certify that I have compared the foregoing document with the original exhibit, and find it to be a full, true, and correct copy thereof.

San Francisco, Oct. 14, 1893.

STEPHEN POTTER,
Special Examiner.

[Endorsed]: Trust Mortgage. Southern Pacific Railroad Company to D. O. Mills and Lloyd Tevis, trustees. Dated April 1, 1875. Resignation of Lloyd Tevis, and ap-

pointment of Gerrit L. Lansing. Acceptance April 18, 1883. Defendants' Exhibit before the Special Examiner No. 90. Filed Dec. 5, 1893. Wm. M. Van Dyke, Clerk.

Defendants' Exhibit No. 56.

This indenture, made this 25th day of August, 1888, between the Southern Pacific Railroad Company, a railroad corporation duly organized and existing under the laws of the United States and of the State of California, party of the first part, the Southern Pacific Company, a corporation organized and existing under the laws of the State of Kentucky, and lessee of portions of the Southern Pacific Railroad, party of the second part, and the Central Trust Company of New York, a corporation created, organized and existing under the laws of the State of New York, party of the third part, witnesseth:

That whereas, the Southern Pacific Railroad Company, as it existed prior to the consolidation and amalgamation hereinafter set out, did, to secure the payment of its bonds in the sum of $46,000,000, heretofore, to wit, on the first day of April, 1875, make and execute its first mortgage on its entire line of railroad as then constituted, to wit, on the whole of its railroad and telegraph line running from the city of San Francisco, in the State of California, in a southerly and southeasterly direction, by way of Carnadero Junction, Salinas Valley, and Polonio Pass, to the Colorado river at or near the "Needles"; also from Carnadero Junction to San Benito; also from Los Gatos creek via Goshen to the junction with the first-mentioned line, between Poso creek and Kern river; also from the junc-

tion near Tehachapi Pass via Los Angeles to the Texas Pacific Railroad near Fort Yuma, and also from Los Angeles to Wilmington, on San Pedro bay, aggregating eleven hundred and fifty (1,150) miles of railroad and telegraph line, more or less, and on the several sections of land granted to said Southern Pacific Railroad Company by the acts of Congress of July 27, 1866, and March 3, 1871, as stated in said mortgage, saving, excepting, and reserving, however, all parts and parcels of said lands which had been sold or contracted to be sold or disposed of theretofore, or which were or should be included in the rights of way of said railroads and telegraph lines of said company as defined and granted by the acts of Congress aforesaid, or used for the construction or operation thereof, or for the track, yards, depot grounds, buildings or erections thereof.

And whereas, subsequent thereto, by instrument in writing dated the fourth day of May, 1888, and pursuant to the laws of the State of California in such cases made and provided, the San Jose and Almaden Railroad Company, the Pajaro and Santa Cruz Railroad Company, the Monterey Railroad Company, the Monterey Extension Railroad Company, the Southern Pacific Branch Railway Company, the San Pablo and Tulare Railroad Company, the San Pablo and Tulare Extension Railroad Company, the San Ramon Valley Railroad Company, the Stockton and Copperopolis Railroad Company, the Stockton and Tulare Railroad Company, the San Joaquin Valley and Yosemite Railroad Company, the Los Angeles and San Diego Railroad Company, the Los Angeles and Inde-

pendence Railroad Company, the Long Beach, Whittier and Los Angeles County Railroad Company, the Long Beach Railroad Company, the Southern Pacific Railroad Extension Company, and the Ramona and San Bernardino Railroad Company (railroad corporations organized and existing under the laws of the State of California) amalgamated and consolidated their capital stocks, debts, properties, assets, and franchises with the capital stock, debts, properties, assets, and franchises of the Southern Pacific Railroad Company of California.

And whereas, by force and effect of said amalgamation and consolidation, the said party of the first part has succeeded to all of the debts, properties, assets, and franchises of said several railroad companies, and now holds and owns the said several lines of railroad heretofore owned and held by them respectively, together with their respective properties, assets, and franchises.

And whereas, the said Pajaro and Santa Cruz Railroad Company, to aid in the construction and completion of its line of railroad, did, prior to said amalgamation and consolidation, authorize the issuance of five hundred and thirty (530) of its thirty-year first mortgage bonds of one thousand dollars each, bearing date the first day of January, 1885, bearing interest at the rate of six per cent per annum, payable semiannually, secured by a mortgage or deed of trust bearing date the first day of January, 1885, to S. T. Gage and E. B. Ryan, and covering its railroad, commencing at the town of Pajaro, in the county of Monterey, in the State of California, and extending thence to the city of Santa Cruz, in the county of Santa Cruz, in said State, with a branch line commencing at the town of

Aptos, in said county of Santa Cruz, and running thence in a northerly and northeasterly direction, following the meanders of Aptos creek to the point of confluence of said creek with the creek running from White's Lagoon, a distance of twenty-six miles, as near as may be, together with all its corporate rights, its appurtenances, etc.

And whereas, the said Monterey Railroad Company, to aid in the construction and completion of its line of railroad, did, prior to said amalgamation and consolidation, authorize the issuance of two hundred and fifty (250) of its twenty-year first mortgage bonds of one thousand dollars each, bearing date the first day of April, 1880, bearing interest at the rate of five per cent per annum, payable semiannually, secured by a mortgage or deed of trust bearing date the ninth day of March, 1880, to Stephen T. Gage and E. B. Ryan, and covering the whole of the railroad line of said company, commencing at or near the town of Castroville, in the county of Monterey, in the State of California, and running through the county of Monterey to a point at or near the city of Monterey in said county, a distance of fifteen and four-tenths (15.4) miles, together with all its corporate rights, its appurtenances, etc.

And whereas, the said Southern Pacific Branch Railway Company, to aid in the construction and completion of its line of railroad, did, prior to said amalgamation and consolidation, authorize the issuance of nine thousand of its fifty-year first mortgage bonds of one thousand dollars each, bearing date the first day of April, 1887, bearing interest at the rate of six per cent per annum, payable semiannually, secured by a mortgage or deed of trust

bearing date the twenty-fourth day of November, 1886, to William E. Brown and Gerrit L. Lansing, and covering the whole of the railroad line of the said company, commencing at a point near San Miguel, in the county of San Luis Obispo, in the State of California, there connecting with the railroad of the Southern Pacific Railroad Company, and running from thence in a general southeasterly direction through and into the counties of San Luis Obispo, Santa Barbara, Ventura, and Los Angeles, to a connection with the railroad of the Southern Pacific Railroad Company, near Newhall, in said Los Angeles county, a distance of about two hundred and fifty miles, as near as may be, together with all the corporate rights pertaining to said road, its appurtenances, etc.

And whereas, the said San Pablo and Tulare Railroad Company, to aid in the construction and completion of its line of railroad, did, prior to said amalgamation and consolidation, authorize the issuance of three thousand seven hundred and fifty (3,750) of its thirty-year first mortgage bonds of one thousand dollars each, bearing date the first day of April, 1878, bearing interest at the rate of six per cent per annum, payable semiannually, secured by a mortgage or deed of trust bearing date the second day of September, 1878, to Albert Gallatin and Charles Miller, and covering its line of railroad, constructed and unconstructed, running from a point at or near Martinez, in the county of Contra Costa, through the counties of Contra Costa, San Joaquin, Stanislaus, Merced, and Fresno, to a point at or near Los Gatos creek, a distance of one hundred and fifty (150) miles, as near as may be, with all rolling stock, appurtenances, etc.

And whereas, the said Los Angeles and San Diego Railroad Company, to aid in the construction of its line of railroad, did, prior to said amalgamation and consolidation, authorize the issuance of two thousand eight hundred (2,800) of its thirty-year first mortgage bonds of one thousand dollars each, bearing date the first day of July, 1880, with interest at the rate of six per cent per annum, payable semiannually, secured by a mortgage or deed of trust bearing date the second day of December, 1880, to S. T. Gage and E. B. Ryan, and covering its railroad line constructed and unconstructed, from the city of Los Angeles, in a southerly direction, to the city of San Diego, in the southwestern part of the State of California, with all rolling stock, appurtenances, etc., a distance of 140 miles, as near as may be.

And whereas, there are now outstanding $530,000 of said Pajaro and Santa Cruz Railroad Company's bonds; $220,000 of said Monterey Railroad Company's bonds (the balance of $30,000 having been redeemed, canceled and retired); $3,145,000 of said Southern Pacific Branch Railway Company's bonds (the balance, $5,855,000, being unissued and in the hands of the party of the first part); $1,023,000 of said San Pablo and Tulare Railroad Company's bonds (the balance, $2,727,000, being unissued and in the hands of the party of the first part); and $556,000 of the said Los Angeles and San Diego Railroad Company's bonds (the balance, $2,244,000, being unissued and in the hands of the party of the first part).

And whereas, said mortgages and each of them are valid and subsisting liens upon the lines of railroad heretofore described, and now the property of the party of the first part.

And whereas, the owners of all the outstanding bonds heretofore issued as aforesaid by the Pajaro and Santa Cruz Railroad Company, the Monterey Railroad Company, the San Pablo and Tulare Railroad Company, and the Los Angeles and San Diego Railroad Company are willing to surrender said bonds and permit the respective mortgages heretofore made to secure the payment thereof, and hereinbefore described, to be satisfied of record and canceled, and receive in lieu thereof new fifty-year five per cent bonds secured by this mortgage.

And whereas, the party of the first part desires and intends to redeem and take up said mortgage bonds issued by said constituent companies, to-wit, the outstanding mortgage bonds of the Pajaro and Santa Cruz Railroad Company in the sum of $530,000, the outstanding mortgage bonds of the Monterey Railroad Company in the sum of $220,000, the outstanding mortgage bonds of the San Pablo and Tulare Railroad Company in the sum of $1,023,000, and the outstanding mortgage bonds of the Los Angeles and San Diego Railroad Company in the sum of $556,000, and retire the same, and to destroy, cancel, and retire the unissued bonds of the San Pablo and Tulare Railroad Company in the sum of $2,727,000, and the unissued bonds of the Los Angeles and San Diego Railroad Company in the sum of $2,244,000 and cause said existing mortgages to be satisfied of record and canceled, and, as rapidly as the same can be done upon terms satisfactory to the party of the first part, to arrange for the redemption of the mortgage bonds issued by said Southern Pacific Branch Railway Company, and when arrangements have been made for the redemption of all of such bonds

to cause the same to be canceled, and the mortgage securing the same to be satisfied of record, and in lieu of said outstanding bonds to issue new fifty-year five per cent bonds secured by this mortgage, and said party of the first part desires and intends to pay off and discharge the floating debt incurred in the construction and completion of certain portions of its lines of railroad, and desires to complete the construction and equipment thereof, and to that end desires and intends to issue its bonds in an amount necessary to accomplish said objects and purposes, and to secure the payment thereof by mortgage upon certain of its constituent lines of railroad hereinafter more particularly described.

And whereas, heretofore, to wit, on the 21st day of August, 1888, the board of directors of said Southern Pacific Railroad Company, at a meeting of said board, at which all the members thereof were present, by a resolution to that effect, which was unanimously adopted, passed, and concurred in, did determine and direct that bonds of said company be prepared, executed, and issued in its name and under its corporate seal, and signed by its president and secretary, to bear date the first day of October, 1888, in the sum of one thousand dollars each, to the number of thirty-eight thousand, numbered from one to thirty-eight thousand, inclusive, payable to the Central Trust Company of New York, or to the bearer thereof, fifty years after date, with interest at the rate of five per cent per annum, payable semiannually, on the first days of April and October of each year ensuing its date, payable both principal and interest in United States gold coin in the city of New York.

And whereas, the said board of directors, at the meeting aforesaid, and in the manner and form, and by the vote aforesaid, did further order and direct that said bonds should be drawn in substantially the following form, to wit:

$1,000. United States of America. $1,000.

Southern Pacific Railroad Company (of California).

First Mortgage Five Per Cent Gold Bond.

The Southern Pacific Railroad Company (of California) acknowledges itself indebted to the Central Trust Company of New York, or to the bearer hereof, in the sum of one thousand dollars gold coin of the United States, which sum it promises to pay to the bearer hereof, or, if registered, to the registered holder hereof, fifty years after date, and it further promises that on presentation and surrender at or after maturity of the respective interest coupons hereunto annexed, it will pay to the person presenting the same, or, if this bond is registered and the interest coupons appertaining thereto canceled, it will pay to the registered holder hereof, interest on such principal sum at the rate of five per cent per annum, semiannually, on or after the first day of April and October of each year ensuing the date hereof, both principal and interest payable at the office or agency of the company in the city of New York, in United States gold coin.

This is one of the first mortgage bonds issued under and secured by the indenture of mortgage or deed of trust from this company to the Central Trust Company of New York, trustee, dated the twenty-fifth day of August, 1888.

None of said bonds are to be in anywise binding or obligatory unless authenticated by a certificate endorsed

thereon, signed by said trustee or its successor or successors in said trust.

This bond may, at any time, upon production thereof to said railroad company, and proper endorsement being made thereon, and either with or without the surrender to said railroad company for cancellation of all unpaid interest coupons appertaining thereto, be registered upon the books of the company in the name of the holder thereof, and thereupon its transferability by delivery will cease, and thereafter it can be transferred only by the registered holder or his attorney by transfer duly made upon said books.

In witness whereof, the said Southern Pacific Railroad Company has caused its corporate seal to be hereunto affixed, and this bond to be signed by its president and secretary, this first day of October, one thousand eight hundred and eighty-eight.

SOUTHERN PACIFIC RAILROAD COMPANY,

_____,

President.

_____,

Secretary.

And whereas, the said board of directors, at the meeting aforesaid, and in the manner and form and by the vote aforesaid, did further direct that to each of said bonds there should be attached one hundred interest coupons, numbered respectively from one to one hundred, inclusive, substantially in the following form, to wit:

$25. (Coupon.) $25.

Southern Pacific Railroad Company (of California).

First Mortgage Five Per Cent Gold Bond No. ——.

Interest coupon for twenty-five dollars, due ————, payable in the city of New York, in United States gold coin.

Coupon No. ——. ————,

Treasurer.

And that all such coupons should bear the impression of the engraved signature of the treasurer, which impression should be regarded and treated, in fact and in law, as equivalent to a manual signing by said officer.

And whereas, the said board of directors, at the meeting aforesaid, and in manner and form and by the vote aforesaid, did further direct that, to secure the payment of said bonds, a mortgage upon certain of its constituent lines of railroad and telegraph and upon certain of its lands should be executed in its name and under its corporate seal, and be signed by its president and secretary, to the Central Trust Company of New York as trustee for the holders of said bonds; said mortgage to cover the railroad and telegraph line, rolling stock, stations, fixtures, and franchises held, owned, and possessed by it in the following constituent lines of railroad, all lying within the State of California:

First.—Running from Hillsdale to the town of New Almaden, all in Santa Clara county, being seven and eight-tenths (7.8) miles in length, more or less.

Second.—Running from Pajaro, in Monterey county, to Santa Cruz, in Santa Cruz county; also running from Ap-

tos, in said Santa Cruz county, northerly and northeasterly, about five miles, being twenty-six and two-tenths (26.2) miles in length, more or less.

Third.—Running from a point at or near Castroville Station in Monterey county to a point at or near Monterey in said county; thence northwesterly to a point at or near Pacific Grove Retreat; and thence southwesterly to a point near the mouth of the Carmel river—an estimated length of thirty-one and twelve-hundredths (31.12) miles.

Fourth.—Running from a point near San Miguel in San Luis Obispo county, in the State of California, there connecting with the railroad of the Southern Pacific Railroad Company, and running from thence in a general southeasterly direction through and into the counties of San Luis Obispo, Santa Barbara, Ventura, and Los Angeles, to a connection with the railroad of the Southern Pacific Railroad Company in said Los Angeles county near Newhall, being about two hundred and fifty (250) miles in length.

Fifth.—Running from a point near Martinez, in Contra Costa county, to Tracy, in San Joaquin county, a distance of forty-seven and fifty-eight hundredths (47.58) miles, more or less; running thence from Tracy through the counties of San Joaquin, Stanislaus, Merced, Fresno, and Tulare, to a connection with the San Joaquin division of the railroad of the party of the first part at or near Pampa, in the county of Kern, a distance of two hundred and sixty miles, more or less, and aggregating three hundred and seven and fifty-eight hundredths (307.58) miles, more or less.

Sixth.—Running from a point at or near Avon in Contra Costa county to a point on the Central Pacific Railroad at or near Pleasanton, in the county of Alameda, a distance of thirty-five (35) miles, more or less.

Seventh.—Running from a point at or near Oakdale, in Stanislaus county, through and into the counties of Stanislaus, Merced, Fresno, and Tulare, to a point at or near the town of Poso, in Kern county, a distance of two hundred (200) miles, more or less, with branches connecting with the Central Pacific Railroad to or near Modesto in Stanislaus county, a distance of sixteen (16) miles, more or less, to or near Merced, in Merced county, a distance of ten (10) miles, more or less, to or near Sycamore, in Fresno county, a distance of ten (10) miles, more or less, to or near Fresno, in Fresno county, a distance of ten (10) miles, more or less, with a branch to or near Tulare in Tulare county, there connecting with the San Joaquin Division of the railroad of the party of the first part, a distance of sixteen (16) miles, more or less; said lines and branches being two hundred and sixty-two (262) miles in length, more or less.

Eighth.—Running from Berenda Station, in Fresno county, to a point at or near Perry's Ranch in said county, a distance of twenty-five (25) miles, more or less.

Ninth.—Running from a point at or near the city of Los Angeles, in the county of Los Angeles, to the towns of Anaheim and Santa Ana, in said county, and thence through the counties of Los Angeles and San Diego, to a point at or near the city of San Diego, in said last-mentioned county, a distance of one hundred and forty (140) miles, more or less.

Tenth.—Running from a point at or near the city of Los Angeles to Santa Monica, in Los Angeles county, a distance of eighteen and fifty hundredths (18.50) miles, more or less.

Eleventh.—Running from a point at or near Long Beach, in Los Angeles county, to Whittier, thence to Ramona, a distance of thirty (30) miles, more or less; also running from a point at or near Los Angeles to a point on the main line of the railroad of the party of the first part, between El Monte and Puente, and thence northeasterly to a point on or near San Dimos creek, a distance of thirty (30) miles, more or less—all in said county of Los Angeles, and aggregating sixty (60) miles in length, more or less.

Twelfth.—Running from a point at or near Long Beach Junction, in Los Angeles county, to the town of Long Beach; thence easterly to the boundary line between the Ranchos Los Cerritos and Los Alamitos, in said county—a distance of four (4) miles, more or less.

Thirteenth.—Running from a point on the line of the Wilmington Division of the railroad of the party of the first part, between the towns of Wilmington and San Pedro, in the county of Los Angeles, through said town of San Pedro, to a point at or near Point Fermin; thence westerly through the lands of the San Pedro Harbor, Dock and Land Association to the westerly boundary of said lands—all in the county of Los Angeles, and being five (5) miles in length, more or less.

Fourteenth.—Running from a point at or near Ramona, in Los Angeles county, to a point at or near Crafton, in San Bernardino county, a distance of seventy-one (71) miles, more or less.

Fifteenth.—Running from the city of San Francisco, in a southerly and southeasterly direction by way of Carnadero Junction, Salinas Valley and Polonio Pass to Mojave Junction; also from Carnadero Junction to San Benito; also from Los Gatos creek via Goshen to the junction with the first-mentioned line between Poso creek and Kern river; also from the junction near Tehachapi Pass, via Los Angeles to Yuma, in the county of San Diego; and also from Los Angeles to Wilmington on San Pedro bay—aggregating nine hundred and eight miles of railroad and telegraph line, or thereabouts.

And also to cover the lands granted to the Southern Pacific Railroad Company by the acts of Congress of July 27, 1866, and March 3, 1871, above referred to, not sold or contracted to be sold or disposed of prior to the execution of this mortgage, or included in the right of way of the railroads and telegraph lines of the said company, or used or to be used for the construction or operation thereof, or for the track, yards, depot grounds, buildings, or erections thereof.

And whereas, said board of directors, at the meeting aforesaid, and in the manner and form and by the vote aforesaid, did further direct that a sinking fund should be created for the redemption and payment of said bonds by setting apart the sum of twenty thousand dollars of the net income derived by said company from the constituent lines of railroad herein mortgaged in the year 1898, and in each year thereafter, until all of said bonds, principal and interest, shall be redeemed or paid, in trust, to be loaned out at interest upon good securities, or otherwise invested, under the order and direction of said board

of directors, or used to redeem said bonds as often as twenty thousand dollars shall come into the sinking fund; in which case notice shall be published in one daily paper in the city of New York, and one daily paper in the city of San Francisco, for such length of time as the board of directors may order, that said bonds will be redeemed, and inviting bids for the surrender thereof, at prices to be named, the lowest bids to be accepted, and bonds redeemed to the extent of the money in the sinking fund.

And whereas, the Southern Pacific Company, party of the second part herein, and lessee of certain portions of the railroads of the party of the first part affected by this mortgage, has been in writing notified and informed of this mortgage and has, in writing, by order of its board of directors, given its consent thereto, and as an evidence of such consent has become a party hereto:

Now, therefore, this indenture witnesseth, that the said party of the first part, for the purpose of securing the payment of the sums of money mentioned in said bonds, and the interest thereon, and in consideration of the sum of one dollar to the said party of the first part in hand paid by the party of the third part, the receipt whereof is hereby acknowledged, has granted, bargained, sold, released, enfeoffed, conveyed, and confirmed and by these presents does grant, bargain, sell, release, enfeoff, convey, and confirm, unto the said party of the third part, as trustee, and to its successors and assigns forever, the following property, now and hereafter constructed, purchased, acquired, held in possession, and owned by said party of the first part, to wit:

Its constituent lines of railroad lying within the State of California, and running:

First.—From Hillsdale to the town of New Almaden, all in Santa Clara county, being seven and eight-tenths (7.8) miles in length, more or less.

Second.—From Pajaro in Monterey county, to Santa Cruz, in Santa Cruz county; also running from Aptos, in said Santa Cruz county, northerly and northeasterly, about five (5) miles—being twenty-six and two-tenths (26.2) miles in length, more or less.

Third.—From a point at or near Castroville Station, in Monterey county, to a point at or near Monterey, in said county; thence northwesterly to a point at or near Pacific Grove Retreat; and thence southwesterly to a point near the mouth of Carmel river—an estimated length of thirty-one and twelve hundredths (31.12) miles.

Fourth.—From a point near San Miguel, in San Luis Obispo county, in the State of California, there connecting with the railroad of the Southern Pacific Railroad Company, and running from thence in a general southeasterly direction through and into the counties of San Luis Obispo, Santa Barbara, Ventura, and Los Angeles, to a connection with the railroad of the Southern Pacific Railroad Company in said Los Angeles county near Newhall, being about two hundred and fifty (250) miles in length.

Fifth.—From a point at or near Martinez, in Contra Costa county, to Tracy, in San Joaquin county, a distance of forty-seven and fifty-eight hundredths (47.58) miles, more or less; thence from Tracy through the counties of San Joaquin, Stanislaus, Merced, Fresno, and Tulare, to a connection with the San Joaquin Division of the railroad of the party of the first part, at or near Pampa, in the

county of Kern, a distance of two hundred and sixty (260) miles, more or less, and aggregating three hundred and seven and fifty-eight hundredths (307.58) miles, more or less.

Sixth.—From a point at or near Avon, in Contra Costa county, to a point on the Central Pacific Railroad, at or near Pleasanton, in the county of Alameda, a distance of thirty-five miles, more or less.

Seventh.—From a point at or near Oakdale, in Stanislaus county, through and into the counties of Stanislaus, Merced, Fresno, and Tulare to a point at or near the town of Poso, in Kern county, a distance of two hundred (200) miles, more or less, with a branch connecting with the main line of the Central Pacific Railroad to or near Modesto, in Stanislaus county, a distance of sixteen (16) miles, more or less, a branch to or near Merced, in Merced county, a distance of ten (10) miles, more or less, a branch to or near Sycamore, in Fresno county, a distance of ten (10) miles, more or less, a branch to or near Fresno, in Fresno county, a distance of ten (10) miles, more or less, a branch to or near Tulare, in Tulare county, there connecting with the San Joaquin Division of the railroad of the party of the first part, a distance of sixteen (16) miles, more or less; said line and branches being two hundred and sixty-two (262) miles in length, more or less.

Eighth.—From Berenda Station, in Fresno county, to a point at or near Perry's ranch, in said county, a distance of twenty-five (25) miles, more or less.

Ninth.—From a point at or near the city of Los Angeles, in the county of Los Angeles, to the towns of Anaheim and Santa Ana, in said county, and thence through

the counties of Los Angeles and San Diego to a point at or near the city of San Diego, in said last-mentioned county, a distance of one hundred and forty (140) miles, more or less.

Tenth.—From a point at or near the city of Los Angeles to Santa Monica, in Los Angeles county, a distance of eighteen and fifty hundredths (18.50) miles, more or less.

Eleventh.—From a point at or near Long Beach, in Los Angeles county, to Whittier; thence to Ramona, a distance of thirty (30) miles, more or less; also running from a point at or near Los Angeles to a point on the main line of the railroad of the party of the first part between El Monte and Puente, and thence northeasterly to a point on or near San Dimos creek, a distance of thirty (30) miles, more or less—all in said county of Los Angeles, and aggregating sixty (60) miles in length, more or less.

Twelfth.—From a point at or near Long Beach Junction in Los Angeles county to the town of Long Beach; thence easterly to the boundary line between the Ranchos Los Cerritos and Los Alamitos in said county—a distance of four (4) miles, more or less.

Thirteenth.—From a point on the line of the Wilmington Division of the railroad of the party of the first part, between the towns of Wilmington and San Pedro, in the county of Los Angeles, through said town of San Pedro, to a point at or near Point Fermin; thence westerly through the lands of the San Pedro Harbor, Dock and Land Association to the westerly boundary of said lands —all in the county of Los Angeles, and being five (5) miles in length, more or less.

Fourteenth.—From a point at or near Ramona, in Los Angeles county, to a point at or near Crafton, in San Bernardino county, a distance of seventy-one (71) miles, more or less.

Fifteenth.—From the city of San Francisco in a southerly and southeasterly direction by way of Carnadero Junction, Salinas Valley and Polonio Pass to Mojave Junction; also from Carnadero Junction to San Benito; also from Los Gatos creek via Goshen to the junction with the first-mentioned line between Poso creek and Kern river; also from the junction near Tehachapi Pass via Los Angeles to Yuma, in the county of San Diego; also from Los Angeles to Wilmington on San Pedro bay, aggregating nine hundred and eight (908) miles of railroad and telegraph line, or thereabouts.

Including all the rights of way, roadway, track and tracks, together with all the superstructures, depots, depot grounds, station houses, watering places, sidetracks, turnouts, turntables, weighing scales, locomotives, tenders, cars, rolling stock of all kinds, equipments, fixtures, tools, telegraph lines, and all other property which may now or hereafter be acquired for the purpose of operating the constituent lines of railroad hereby mortgaged, including all of the said property which now is or may hereafter, in whole or in part, be constructed or completed, purchased, acquired, held, or owned by the said company, pertaining to that portion of the said lines of railroad hereby mortgaged, together with all and singular the tenements, hereditaments, and appurtenances thereunto belonging and appertaining, and the reversion and reversions, remainder and remainders, rents, incomes, issues, and prof-

its thereof, with all the rights, titles, interest, estate, property, succession, claim, and demand, in law or equity, of the said party of the first part, of, in, and to the same, or any part or parcel thereof.

Also, all and singular the several sections of land so as aforesaid granted by said acts of Congress, and also all the estate, right, title, interest, claim, and demand whatsoever, at law or in equity, of, in, or to the same, or any part or parcel thereof, which said party of the first part now has, holds, owns, or is entitled to, or hereafter may or shall acquire, have, own, or be or become entitled to, by force or virtue of the said acts of Congress, saving, excepting, and reserving all parts and parcels of said lands which have been sold or contracted to be sold or disposed of heretofore, or which are or shall be included in the right of way of the railroads and telegraph lines of the said company, as defined and granted by the acts of Congress aforesaid, or used for the construction and operation thereof, or for the track, yards, depot grounds, buildings, or erections thereof.

To have and to hold the above granted and described premises, property, and franchises, with the appurtenances, unto the said party of the third part, and to its successors duly appointed, upon trust and for the use and benefit of the person or persons, body or bodies politic or corporate, who shall have become or be from time to time holders of the said first mortgage bonds secured hereby, or any of them.

Provided always, and these presents are upon the express condition, that if the said party of the first part, or its successors, shall well and truly pay or cause or pro-

cure to be paid unto the holders, from time to time, of said bonds and each and every one of them, the said sums of money secured to be paid by the said bonds, and the interest coupons attached thereto, at the places and times, and in the manner, set forth in the said bonds, according to the true intent and meaning thereof, then these presents, and the property, estate, rights, franchises, and privileges herein and hereby granted and conveyed shall cease, determine, and be void.

Until default shall be made by the said party of the first part, its successors and assigns, in the payment of the principal or interest of the said bonds, or some of them or some part thereof as hereinafter provided, the said party of the first part, its successors and assigns, shall be suffered and permitted to possess and enjoy the said premises, with their appurtenances, and all and singular the rights and franchises hereinbefore described, and to receive, take, and use the tolls, income, earnings, and profits thereof, and the trustee or trustees hereunder shall have full power in its or their discretion, upon written request of the party of the first part, its successors or assigns, to convey by way of release or otherwise, and fully release from the lien of this mortgage, any lands or other property of any description (except only the lands granted by acts of Congress, as hereinbefore prescribed) which in its or their judgment shall not be necessary for or for use in connection with the said railroads, and to consent to such changes in the location of tracks, depots, and other buildings as in its or their judgment may be expedient, and to make and deliver the releases and conveyances necessary to carry the same into effect, but any

lands or other property which may be acquired for permanent use in substitution for any so released or conveyed shall thereupon become subject to the lien of this mortgage, and upon request of the trustee or trustees hereunder shall be conveyed to it or them by the party of the first part, its successors or assigns, upon the trusts of these presents.

But if default shall be made in the payment of the said sums of money specified in said bonds, or in the payment of said interest coupons, or either of them, or any part thereof, and if the same shall remain unpaid for the period of six months from and after the time when the same should have been paid according to the terms of said bonds, then the said party of the third part, or its successor in said trust, by itself or its agents or servants in that behalf, may, upon request of the holder or holders of not less than one-fourth of said bonds then outstanding, on which the interest or principal shall be and have so remained in default as aforesaid, enter into and upon and take possession of all, or in its or their discretion any part of, the said constituent lines of railroad hereby mortgaged, and work and operate the said constituent lines of railroad, and receive the income, receipts, and profits thereof and out of the same pay:

First, the expense of running and operating the same, including therein reasonable counsel fees and such reasonable compensation as it may allow to the several persons employed or engaged in the running and superintendence of the same.

Second, the expense of keeping the said roads, the appurtenances, the locomotives, and the rolling stock

thereof in good and sufficient repair to prevent deterioration in the value thereof, and all other reasonable and proper charges and expenses of the care and management thereof.

And third, pay, as far as the same will suffice, all interest and principal, if any, which may be due on said bonds, and in case of any deficiency apply the said receipts, after the payment of all said charges and expenses, to the payment thereof, ratably, without preference of any kind.

Or the said party of the third part may, in case of default as aforesaid, and upon request as aforesaid, foreclose this mortgage, and sell and dispose of according to law, all of the constituent lines of railroad hereby mortgaged, together with all of the rights, property, privileges, franchises, real and personal, connected therewith or pertaining thereto, that are subject to this mortgage, with the appurtenances herein and hereby granted, or so much as may be necessary, and out of the money arising from such sale, pay:

First, the cost and charges and expenses of the foreclosure and sale.

Second, any expenses, costs and charges of the execution of the trust, previously incurred and remaining unpaid.

And third, distribute the residue of said proceeds among the holders of said bonds and coupons in proportion to their several interests until all have been paid in full, principal and accrued interest.

If any default shall be made in the payment of interest on any of said bonds for six months after demand at the

place of payment, when the same shall become due, then the said trustee may, on being requested by the holders of at least one hundred thousand dollars of such bonds, enter into and take possession of any of the lands above conveyed, and foreclose this mortgage thereon, and may sell at public auction upon like notice as hereinafter prescribed so much of said lands as may be necessary to discharge all arrears of such interest, and apply the proceeds, after deducting the cost, charges, and expenses of such entry, foreclosure, and sale, to the payment of such arrears of interest. If any such default shall continue for one year from the time of such demand and refusal, the principal sum of all bonds then outstanding shall become due and payable, and thereupon or upon default in the payment of the principal of such bonds at their maturity, the said trustee may enter into and take possession of all the lands above by these presents mortgaged or conveyed, foreclose this mortgage thereon, and sell at public auction all said lands, or so much thereof as may be necessary, first giving at least six months' previous notice of the time and place of sale in at least one newspaper published in the city of New York, and in one published in each of the cities of San Francisco, Sacramento, Los Angeles, and San Diego; and they shall apply the proceeds thereof, after deducting the costs, charges, and expenses of such last-mentioned entry, foreclosure, and sale, to the payment of all said bonds then outstanding, and the interest accrued thereon, rendering the surplus, if any there shall be, unto the said party of the first part.

In case of any sale upon any such foreclosure or at any such public auction, the said trustees shall make, execute, and deliver a conveyance of the said lands so sold, which shall convey to the purchasers all the rights and privileges of the said party of the first part, in and to the property so sold, to the same extent as the same shall have been previously enjoyed and held by the said party of the first part.

If after any such entry shall be made or any foreclosure proceedings shall be commenced, for the satisfying of interest only, as above provided, and before the lands are sold thereon, the said party of the first part shall pay and discharge such interest and deliver the coupons therefor to the said trustee, and pay all the costs, charges, and expenses incurred in such entry and foreclosure and the proceedings thereon, then and in every such case the said trustee shall discontinue its proceedings thereon, and restore to said party of the first part all of such lands, to be held subject to the above conveyance and mortgage, and subject to all the provisions, terms, and conditions of these presents, in like manner as if such entry had not been made, nor such foreclosure proceedings commenced.

All lands granted or conveyed under the acts of Congress hereinbefore referred to and in anywise covered or affected by the provisions hereof shall be subject to the express provision that if, and so long as the bonds issued under and secured by the said indenture of mortgage to D. O. Mills and Lloyd Tevis, dated April 1, 1875, or any thereof shall remain outstanding, any and all sales made in the manner in said last-mentioned indenture of mortgage prescribed shall absolutely and forever release the

said lands from any and all lien or encumbrance of, under, or in respect of this mortgage or the bonds issued thereunder; and if and when all the bonds issued under said indenture of mortgage of April 1, 1875, shall have been fully satisfied and discharged and the lien of such last-mentioned indenture of mortgage upon such lands fully released, then the said lands, so far as they remain unsold at that time, shall be subject to the like provisions in respect to sale and conveyance, and release from the lien of this mortgage, as are in said mortgage of April 1, 1875, prescribed in respect to sale, and conveyance, and release from the lien thereof.

This indenture further witnesseth, that said party of the first part hereby agrees and covenants to and with said party of the third part that it will create a sinking fund for the redemption and payment of said bonds, by setting apart the sum of twenty thousand dollars of the net income derived by it from the constituent lines of railroad herein mortgaged, in the year 1898, and in each year thereafter, until all of said bonds, principal and interest, shall be redeemed or paid, in trust, to be loaned out at interest upon good securities, or otherwise invested under the order and direction of the board of directors of the party of the first part, or used to redeem said bonds as often as twenty thousand dollars shall come into the sinking fund; in which case notice shall be published in one daily paper in the city of New York, and one daily paper in the city of San Francisco, for such length of time as said board of directors may order, that said bonds will be redeemed, and inviting bids for the surrender thereof, at prices to be named, the lowest bids

to be accepted and bonds redeemed to the extent of the money in the sinking fund.

And this indenture further witnesseth, that the said party of the first part hereby agrees and covenants to and with the said party of the third part, and its successors in said trust, that it will pay all ordinary and extraordinary taxes, assessments, and other public burdens and charges which shall or may be legally imposed upon the property herein described and hereby mortgaged and every part thereof, and the said party of the third part, or its successors in said trust, or any one or more of the holders of said bonds, may, in case of default of the said party of the first part in this behalf, pay and discharge the same, and any other lien or encumbrance upon said property, which may in any way, either in law or equity, be or become in effect a charge or lien thereon prior to these presents, or to which this mortgage may be subject or subordinate, and, for all payments thus made, the parties so making the same shall be allowed interest thereon at the rate of six per cent per annum, and such payments, with the interest thereon, shall be and are hereby secured to them by these presents, and declared to be payable and collectible in the same sort of currency or money wherein they shall have been paid, and the same shall be payable by said party of the first part to said party of the third part, upon demand, in trust for the party or parties paying the same, and may be paid out of the proceeds of the sale of said property and franchises hereinbefore provided.

And this indenture further witnesseth, that the said party of the first part further covenants and agrees to

and with the said party of the third part, and its successors in said trust, that it will at any and all times hereafter, upon the request of the said party of the third part, execute, acknowledge, and deliver to the said party of the third part and its successors in said trust all and every such further necessary and reasonable conveyances and assurances of the said premises, or any part thereof, as may by the party of the third part or its successors in the trust hereby created, be reasonably advised or required for more fully carrying into effect the objects of this conveyance.

And the said party of the third part and its successors in said trust shall be entitled to receive a just and proper compensation for all services rendered by it or them in the discharge of said trust, and the same shall be deemed to be secured hereby. And it is hereby stipulated and agreed that the said party of the third part and its successors in said trust shall not be responsible for the acts or omissions of any agent or agents employed by it or them in any manner in and about the execution of the trust hereby created, when such agent or agents are selected with reasonable discretion, or with the approbation or with the knowledge and without the express disapprobation of said party of the first part.

This indenture further witnesseth, that should the said party of the third part for any reason fail, refuse, or become incompetent to discharge the duties or trusts herein conveyed to, imposed on, and accepted by it, then and in that event the board of directors of the party of the first part shall nominate and appoint a successor or successors to said party of the third part, which said suc-

cessor or successors shall be vested with the same properties, and clothed with the same powers, rights, and duties, and be subject to the same obligations, as the said party of the third part named herein, as fully as though he, they, or it had been named herein as such trustee or trustees.

And this indenture further witnesseth, that the party of the first part hereby agrees to take up, pay off, discharge, and retire the outstanding bonds of the Pajaro and Santa Cruz Railroad Company in the sum of five hundred and thirty thousand dollars ($530,000), the outstanding bonds of the Monterey Railroad Company in the sum of two hundred and twenty thousand dollars ($220,000), the outstanding bonds of the San Pablo and Tulare Railroad Company in the sum of one million and twenty-three thousand ($1,023,000) dollars, and the outstanding bonds of the Los Angeles and San Diego Railroad Company in the sum of five hundred and fifty-six thousand ($556,000) dollars, and to destroy, cancel, and retire all of said bonds unissued and in its hands, and cause said existing mortgages to be satisfied of record and canceled, and to take up said outstanding bonds with the new fifty-year five per cent bonds to be issued under this mortgage, upon such terms as may be agreed upon, said redemption and cancellation and satisfaction to be made without unnecessary delay.

It is further provided, covenanted, declared, and agreed that the party of the third part and its successors in the trust hereby created is and are from time to time to authenticate and certify as issued hereunder, and de-

liver to the party of the first part, its successors or assigns, first mortgage bonds in the form or substantially the form above prescribed, to amounts which shall aggregate, but shall not exceed, twenty-two thousand five hundred dollars par value of such bonds per mile for each mile of road constructed or acquired by the said party of the first part, its successors or assigns, and described in the foregoing thirteen subdivisions hereof, designated from "First" to "Third," both inclusive, and from "Fifth" to "Fourteenth," both inclusive, and for twenty-five miles in addition thereto, and to further amounts not exceeding seven thousand five hundred dollars per mile, additional thereto, for expenses and disbursements incurred in and about double tracking, masonry, iron bridges, rolling stock, or other betterments or improvements either to the permanent way, local or terminal facilities, or rolling stock. The said party of the third part, and its successors in the trust hereby created, is and are also from time to time to authenticate and certify as issued hereunder, and deliver to the party of the first part, its successors and assigns, additional first mortgage bonds in the form or substantially the form above prescribed, to the amounts to which bonds of the Southern Pacific Branch Railway Company issued or to be issued under and secured by the mortgage of November 24, 1886, hereinbefore referred to, shall have been deposited with the trustee hereunder.

All bonds so deposited with the trustee hereunder shall be held as collateral security for the bonds issued under this mortgage until all of the bonds issued under

and secured by such mortgage of the Southern Pacific Branch Railway Company shall have been so deposited, whereupon such deposited bonds shall be canceled and the mortgage securing the same shall be satisfied of record. While such Southern Pacific Branch Railway Company's bonds remain so on deposit with the trustee, neither such bonds nor the coupons appertaining thereto shall be required to be paid unless proceedings shall be taken for the foreclosure of the mortgage securing the same, in which case all the bonds and coupons which shall have been so deposited with the trustee shall be entitled to share for the benefit of the bonds issued under this mortgage, on equal terms with the other bonds issued under and secured by said Southern Pacific Branch Railway Company mortgage.

When said Southern Pacific Branch Railway Company mortgage shall have been satisfied of record, the party of the first part, its successors and assigns, shall be entitled from time to time to receive from the trustee hereunder, duly authenticated as issued under and secured by this mortgage, bonds in respect of the line described in the foregoing subdivision "Fourth" hereof, on the mileage basis of $22,500 and $7,500, as above prescribed, in respect of the lines described in subdivisions "First" to "Third," both inclusive, and from "Fifth" to "Fourteenth," both inclusive, due allowance being made on the basis of $30,000 per mile for the bonds theretofore issued against deposit of said Southern Pacific Branch Line bonds.

Authenticating certificates to such bonds are to be

signed, and deliveries thereof to be made, by the trustee under this mortgage from time to time upon presentation to it of certificates, in writing, executed by the president and chief engineer of the party of the first part, or its successors, reciting the facts authorizing delivery of such bonds hereunder, and without other evidence or proof of such facts; provided, however, that, notwithstanding anything herein contained, the party of the first part, or its successors, may at any time or from time to time, require the party of the third part or its successors to authenticate and certify hereunder and deliver to said party of the first part, its successors or assigns, and permit the sale of such amount or amounts of such bonds as the party of the first part or its successors may think fit; provided, that the proceeds of any such bonds issued in excess of the limits hereinabove prescribed shall be received by the trustee or trustees hereunder, and not by the party of the first part or its successors or appointees, and shall be disbursed by said trustee or trustees only pro rata as and when the party of the first part or its successors would have been entitled to receive such bonds under the foregoing provisions hereof; and provided, further that the total amount of bonds issued under or secured by this deed of trust is not in any event to exceed for all purposes herein mentioned the aggregate sum of thirty-eight million dollars.

In witness whereof, the said Southern Pacific Railroad Company, the party of the first part, has caused these

presents to be signed in its name by its president, and attested by its secretary, and sealed with its corporate seal.

SOUTHERN PACIFIC RAILROAD COMPANY,
By CHAS. F. CROCKER,
President.

Attest:
[Seal] J. L. WILLCUTT,
Secretary.

The Southern Pacific Company, party of the second part, the lessee of portions of the said Southern Pacific Railroad affected by the foregoing instrument, does hereby consent thereto, and hereby waives any and all objection it might or could have to the execution thereof, or to the issuance of the bonds therein provided for; provided that nothing in this consent or assent contained shall be construed as a grant of any of the property rights of said Southern Pacific Company, or of its franchises, to the mortgagee or trustee named herein.

In testimony whereof, said Southern Pacific Company has caused these presents to be signed in its name by its third vice-president and attested by its secretary, and its corporate seal to be hereunto affixed, this 25th day of August, 1888.

SOUTHERN PACIFIC COMPANY,
By CHAS. F. CROCKER,
Third Vice-President.

Attest:
[Seal] G. L. LANSING,
Secretary.

The Central Trust Company of New York, party of the third part to the foregoing mortgage or deed of trust, hereby accepts the trust created and declared in and by the foregoing instrument, and agrees to discharge the same pursuant to the provisions in that behalf therein contained.

In testimony whereof, said Central Trust Company of New York has caused these presents to be signed in its name by its second vice-president, and attested by its assistant secretary, and its corporate seal to be hereunto affixed, this seventh day of September, 1888.

CENTRAL TRUST COMPANY OF NEW YORK,

By E. FRANCIS HYDE,

Second Vice-President.

Attest:

[Seal] B. G. MITCHELL,

Asst. Secretary.

State of California,
City and County of San Francisco. } ss.

I, J. F. Kingwell, a notary public in and for the city and county of San Francisco, State of California, residing in said city and county, duly commissioned and sworn, do certify that on the 25th day of August, A. D. 1888, personally appeared before me, in said city and county, Charles F. Crocker, president of the Southern Pacific Railroad Company, and J. L. Willcutt, secretary of the Southern Pacific Railroad Company, who are both personally known to me to be the said officers of the said Southern Pacific Railroad Company, respectively, and the individ-

uals described in and who have executed the foregoing instrument as such officers of said company, and they each severally and personally then and there acknowledged to me that they executed the said instrument as the free act and deed of the said Southern Pacific Railroad Company, freely and voluntarily, and for the uses and purposes therein mentioned; and the said J. L. Willcutt, with whom I am personally acquainted, being duly sworn, did depose and say: That he resides in the city of Oakland, county of Alameda, and State of California; that he is and was the secretary of the Southern Pacific Railroad Company at the date and time he executed the foregoing instrument; that he knows the corporate seal of said company, and is and was at the date of execution of said instrument the legal custodian of said seal; that the seal affixed to the foregoing instrument was and is such corporate seal, and was by him so affixed by order of the board of directors of said Southern Pacific Railroad Company; that he signed his name thereto as secretary of said company by the like order. And the said J. L. Willcutt further said that he was acquainted with Charles F. Crocker, and knows that said Charles F. Crocker is and was president of the Southern Pacific Railroad Company at the date and execution of said instrument; that the signature of the said Charles F. Crocker subscribed to said instrument is in the genuine handwriting of the said Charles F. Crocker, and was thereto by him subscribed by the like order of the board of directors of said company, and in the presence of him, the said deponent.

In witness whereof, I have hereunto set my hand and affixed my official seal, the day and year in this certificate first above written.

[Seal] J. F. KINGWELL,
Notary Public in and for the City and County of San Francisco, California.

State of California,
City and County of San Francisco. } ss.

On this twenty-fifth (25) day of August, in the year one thousand eight hundred and eighty-eight (1888), before me, J. F. Kingwell, a notary public in and for the said city and county of San Francisco, State of California, duly commissioned and qualified, personally appeared Chas. F. Crocker, known to me to be the 3rd vice-president of the Southern Pacific Company, and G. L. Lansing, known to me to be the secretary of the Southern Pacific Company, the corporation that executed the within instrument, and acknowledged to me that such corporation executed the same.

In witness whereof, I have hereunto set my hand and affixed my official seal, this 25th day of August, A. D. 1888.

[Seal] J. F. KINGWELL,
Notary Public in and for the City and County of San Francisco, State of California.

State of New York,
City and County of New York. } ss.

On this 7th day of September, in the year 1888, before me, Charles Edgar Mills, a commissioner of the State of California, in and for the State of New York, residing in said city of New York, personally appeared E. Francis Hyde and Benjamin G. Mitchell, known to me to be the second vice-president and assistant secretary of the corporation that executed the within instrument, and acknowledged to me that such corporation executed the same.

In witness whereof, I have hereunto set my hand and affixed my official seal this 7th day of September, A. D. 1888.

[Seal] CHARLES EDGAR MILLS,
Commissioner for California in New York, 115 and 117 Broadway, N. Y. City.

[Endorsed]: Southern Pacific Railroad Company of the first part, Southern Pacific Company of the second part, and Central Trust Company of New York of the third part. Deed of trust. Dated August 25, 1888.

Recorded at the request of H. D. La Motte, Oct. 2nd, A. D. 1888, at 30 minutes past 4 P. M., in liber No. 21 of Mortgages, page 10, Records of San Mateo Co., Cal.

E. EIKERENKOTTER,
Recorder.
By Claude Fox.
Deputy Recorder.

Recorded at request of H. D. La Motte, in Book 84 of Mortgages, page 319 et seq., Oct. 3d, 1888, at 14 min. past 9 o'clock A. M., Records of Santa Clara Co., Cal.

Pd. $19.

CHAS. P. OWEN,
County Recorder.

Filed for record at the request of H. D. La Motte, Oct. 3, A. D. 1888, at 1 o'clock P. M., and recorded in Vol. 1 of Trust Deeds, page 123, San Benito County Records.

Pd. $19.

R. SHAW,
Recorder.
By Robt. Shaw,
Deputy Recorder.

Filed for record at the request of H. D. La Motte, Oct. 4, A. D. 1888, at 9 o'clock A. M., and recorded in Vol. 54 of Mortgages, page 83, Oct. 4, 1888, Santa Cruz County Records.

Paid, $19.

ED. MARTIN,
County Recorder.

Recorded at the request of H. D. La Motte, Oct. 4th, 1888, at —— minutes past 2 P. M., in Record A of Trust Deeds, page 409, Monterey County, Cal.

Recorder's fees, $19.

DAVID WALLACE,
County Recorder.

Recorded at request of H. D. La Motte, Oct. 6, 1888, at 30 minutes past 8 o'clock A. M., in Book "P" of Mortgages, at page 513 et seq., San Luis Obispo County Records.

$18.50.

[Seal]

F. E. DARKE,
Recorder.
By F. E. Darke, Jr.,
Deputy.

Recorded at request of H. D. La Motte, at 25 min. past 10 A. M., Oct. 8, 1888, in Book W of Mortgages, page No. 1, Records of Santa Barbara County, Cal.

Pd. $18.50.

C. A. STUART,
County Recorder.

Recorded at the request of H. D. La Motte, Oct. 9th, A. D. 1888, at 8 min. past 9 o'clock A. M., in Book 11 of Mortgages, page 56, Records of Ventura Co., Cal.

$16.75, pd.

L. F. EASTIN,
County Recorder.
By Fred. Hund,
Deputy Recorder.

Recorded at request of H. D. La Motte, Oct. 10, 1888, at 48 min. past 8 A. M., in Book 179, page 74 of Mortgages, Los Angeles County Records.

Fees, $12.90.

FRANK A. GIBSON,
County Recorder.
By Arthur Bray,
Deputy.

Recorded at request of H. D. La Motte, Oct. 11, 1888, at 8 min. past 8 A. M., in Book 11 of Mortgages, page 129, Records San Bernardino County.

$18.50, paid.

LEGARE ALLEN,
County Recorder.
By Gordon G. Ives,
Deputy Recorder.

Received for record Oct. 12, 1888, at 9 o'clock A. M., at request of H. D. La Motte, and recorded in Book No. 43 of Mortgages, page 1 et seq., San Diego Co., Cal.

Fees.....$23.50, pd.
Comparing. 3

26.50, pd.

E. G. HAIGHT,
County Recorder.
By B. F. Moore,
Deputy.

Recorded at request of H. D. La Motte, Oct. 13th, 1888, at 25 min. past 9 o'clock A. M., in Book 8 of Mortgages, page 376, Records of Kern County.

Fees, $20.00, paid.

N. R. PACKARD,
County Recorder.
By F. A. Shedd,
Deputy.

Recorded at request of H. D. La Motte, at 43 min. past 7 A. M., October 15th, 1888, in Vol. 4 of Trust Deeds, page 446 et seq., Records of Tulare County, Cal.

Fees, $20.00, pd.

W. F. THOMAS,
County Recorder.

Recorded at request of H. D. La Motte, at 45 min. past 1 P. M., Oct. 15th, 1888, in Vol. 86 of Deeds of Fresno County Records, pp. 195 et seq.

$20.

C. L. WAINWRIGHT,
Recorder.

Recorded at request of H. D. La Motte, October 16th, 1888, at 40 min. past 8 A. M., in Book "P" of Mortgages, page 106, Records of Merced County.

$20.00, paid.

J. G. ELLIOTT,
County Recorder.

Recorded at request of H. D. La Motte, October 16th, 1888, at 25 min. past 1 P. M., in Liber 35, Deeds of Trust, page 65, Records of Stanislaus County.

Fee, $10.50.

C. S. ABBOTT,
County Recorder.
By E. E. Howard,
Deputy.

Recorded at the request of H. D. La Motte, October 17th, 1888, at 40 minutes past 12 o'clock M., in Book "N" of Mortgages, page ——, Calaveras County Records.

$20.00.

A. L. WYLLIE,
Recorder,
By Edw. Casey,
Deputy.

Recorded at request of H. D. La Motte, October 18th, 1888, at 35 min. past 10 o'clock A. M., in Book "A," Vol. 64, page 458 of Deeds, San Joaquin County Records.

$20.00, paid.

[Seal]

J. F. MOSELEY,
County Recorder.
By G. E. Housken,
Deputy.

Recorded at request of H. D. La Motte, October 18th, A. D. 1888, at 30 min. past 4 P. M., in Vol. 54 of Deeds, page 267, Records of Contra Costa County.

$17.50, pd.

C. S. COUSINS,
County Recorder.
By A. E. Dunkel,
Deputy Recorder.

Recorded in the office of the county recorder of the city and county of San Francisco, Oct. 24, 1888, at 45 min. past 9 o'clock A. M., in Liber 1320 of Deeds, page 85.

A. T. SPOTTS,
County Recorder.
By C. H. McCourtney,
Deputy.

Recorded Oct. 26th, 1888, at 46 min. past 3 P. M., in Liber 302 of Mortgages, page 1, Records of Alameda County.

F. D. HINDS,
County Recorder.

Recorded in the office of the county recorder of the city and county of San Francisco, Oct. 27th, 1888, at 25 min. past 10 o'clock A. M., in Liber 890 of Mtgs., page 283.

A. T. SPOTTS,
County Recorder.

State of California,
City and County of San Francisco. } ss.

I, Alexander Russell, county recorder, do hereby certify that the annexed is a whole, true, and correct copy of an original record, as will appear by reference to book 1320 of Deeds, page 85 (and 890 Mtges, 283), now in my office, and that said copy has been compared with the original and is a correct transcript therefrom.

Witness my hand and official seal this sixth day of March, A. D. 1889.

(Signed) ALEXANDER RUSSELL,
County Recorder.
Per M. Warschauer,
Deputy.

[Seal Recorder's Office, City and County of San Francisco, Cal.]

(Marked "Defendants Exhibit before the Special Examiner No. 91, Stephen Potter, Special Examiner.")

I hereby certify that I have compared the foregoing document with the original exhibit, and find it to be a full, true and correct copy thereof.

San Francisco, October 14, 1893.

STEPHEN POTTER,
Special Examiner.

[Endorsed]: Deed of trust. Southern Pacific Railroad Company of the first part, Southern Pacific Company of the second part, and Central Trust Company of New York of the third part. Dated August 25, 1888. Defendants' Exhibit before the Special Examiner No. 91. Filed Dec. 5, 1893. Wm. M. Van Dyke, Clerk.

Defendants' Exhibit No. 57.

In the Circuit Court of the United States, Ninth Circuit, Southern District of California.

UNITED STATES OF AMERICA, Complainants,
vs.
SOUTHERN PACIFIC RAILROAD COMPANY et al., Defendants.
No. 184.

Testimony.

New York, November 1, 1893.

Appearances:

Joseph H. Call, Esq., for Complainant.

Joseph D. Redding Esq., for Defendants; and

Patrick A. Nolan, Esq., Notary Public.

Mr. Nolan: Pursuant to a notice, of which the following is a copy:

Please take notice that the defendants herein will take the testimony of F. A. Fogg, J. Blickensderfer, Jr., E. N. Robinson, Morris Speyer, C. P. Huntington, I. E. Gates, J. A. Williamson, and others, each and all of whom reside and live more than one hundred (100) miles from the place of trial herein, and more than one hundred (100) miles from any place at which the Circuit Court of the

United States, for the Ninth Circuit, Southern District of California is appointed to be held by law, at the final hearing for the use on behalf of the defendants before Patrick A. Nolan, a notary public in and for the city and county of New York, State of New York, who is not attorney nor of counsel, nor interested in this case, at the office of Charles H. Tweed, Esq., 7th floor, Mills Building, New York, in the said city of New York, and State of New York, November 1, 1893, at 11 o'clock A. M., and thereafter, from day to day, as the taking of the depositions may be adjourned, and such testimony will be so taken in accordance with the provisions of section 863, 864, and 865 of the Revised Statutes of the United States and the equity rules.

Dated San Francisco, October ——, 1893.

———————,

Solicitor for Defendants, No. 35 Chronicle Building, San Francisco, Cal.

To GEORGE J. DENIS, Esq., United States Attorney and Solicitor for the Complainant in the above entitled action; and

To JOSEPH CALL, Esq., Special United States Attorney and Solicitor for Complainant and of Counsel.

[Endorsed]:

Received a copy of within notice, October 7, 1893, at San Francisco, Cal., but not admitting any right to take testimony of said witnesses as mentioned, nor in manner mentioned.

JOSEPH H. CALL,

Spl. Asst. U. S. Atty., Southern District of California.

There now appear before me on this, the first day of November, A. D. 1893, in the city and county of New York, State of New York, Mr. Joseph H. Call, representing the complainant in the above-entitled action, and Mr. Joseph D. Redding, representing the defendants in the above-entitled action, for the purpose of taking testimony on behalf of the defendants, and in pursuance of the said notice.

Thereupon the following proceedings were taken and had before me, Patrick A. Nolan, notary public in and for the city, county, and State of New York.

Mr. REDDING.—Mr. Call, is it agreeable to you that Mr. Nolan shall employ a stenographer, who shall reduce the questions and answers to writing, on behalf of the notary, Mr. Nolan, which questions and answers, when so reduced to writing and signed by the witness, will have the same force and effect as if reduced to writing by the notary himself in the presence of the witness? And I would further state that, if satisfactory to you, Mr. Call, and until you make objections to the party chosen, I am agreeable that Mr. C. H. Aron may act as the stenographer for the notary, but if you wish another stenographer I am perfectly agreeable that any one that you deem sufficient, provided he be competent, shall be used by the notary in taking and transcribing the testimony.

Mr. CALL.—Without waiving any objections to the jurisdiction of Mr. Patrick A. Nolan to take testimony in this case, I will state that I have no objection to Mr. Aron taking the testimony as stenographer, with the same effect as if it had been personally reduced to writ-

ing by Mr. Nolan, subject to the stipulation that, upon objection being made by counsel for either party, another stenographer may be selected by the parties.

Mr. REDDING.—Mr. Nolan, are you a notary public for the city and county and State of New York?

Mr. NOLAN.—Yes, sir.

Mr. REDDING.—By whom appointed?

Mr. NOLAN.—By the Governor.

Mr. REDDING.—Mr. Call, will you admit that Mr. Patrick A. Nolan is a duly appointed, and now acting under authority, notary public in and for the city and county of New York, State of New York?

Mr. CALL.—Yes.

Mr. REDDING.—Mr. Call, I desire to give notice that I will take the testimony of Mr. William Salomon, one of the members of the firm of Messrs. Speyer & Company; that I will take his testimony on behalf of the defendants before Mr. Nolan, notary public, in the Mills Building, New York, on Thursday, the 2d day of November, 1893, at three P. M. I would further state that to-day, being the 1st of the month and a day of great financial rush and importance in the city of New York, the several witnesses that I have named in my notice, whose testimony we were to commence taking to-day I find impossible to be present without great embarrassment on their part, and consequently I will ask that the taking of the testimony be adjourned by the notary until to-morrow at three P. M.

Mr. CALL.—I will meet you here at three o'clock to-morrow.

Adjourned, accordingly, to to-morrow, Thursday, November 2, 1893, at three o'clock P. M.

New York, November 2, 1893.

Met pursuant to adjournment.

Present: Counsel as before.

Adjourned at the request and on account of the illness of Mr. Call, to to-morrow, November 3, 1893, at three o'clock P. M.

Testimony of defendants resumed, November 3, 1893.

Present:

Mr. Call, representing the Complainant.

Mr. Redding, representing the Defendants; and

Mr. P. A. Nolan, Notary.

WILLIAM SALOMON, Esq., a witness called on behalf of the defendants, being duly sworn by the notary, in accordance with the provisions of the sections of the Revised Statutes of the United States appertaining thereto, testifies as follows:

By Mr. REDDING. Q. 1. What is your name, Mr. Salomon? A. William Salomon.

Q. 2. And what is your occupation?

A. Banking.

Q. 3. With what firm are you connected?

A. Speyer & Company.

Q. 4. How long have you been connected with the firm of Speyer & Company?

A. About twenty-five years.

Q. 5. Will you state, in general, what the nature of the business is that is transacted by that firm and by yourself in connection with it?

A. It is in large part the purchase of railroad and other loans, with a view of selling those loans—as a rule, under what is called a prospectus, with the name of the firm attached to it.

Q. 6. Do you deal with the general public in the loans and business you have mentioned?

A. We deal with the general public in the countries where we make, either directly or indirectly, the so-called issues, under prospectus, of bonds. We sell our bonds to anybody—whether known to us or unknown to us—who, on reading our prospectus or hearing of the issues, may chose to buy the securities which we offer.

Q. 7. Will you state what countries you transact business in?

A. The partners in the firm of Speyer & Company, excepting two, resident in this city, are partners in a firm in London, England, and in a firm in Frankfort-on-the-Main, Germany. They are also pecuniarily interested in a firm in Amsterdam, Holland, and the issues of bonds bought by Speyer & Company are generally made in one, two, three or four of the cities in question.

Q. 8. Those cities include New York and other portions of the United States?

A. They include New York; they are New York, London, Frankfort, Amsterdam (Holland). In connection with the issues which are made in those places by our

own partners, practically also issues are made in other cities of this country as well as Europe.

Q. 9. As a member of the firm of Speyer & Company, are you familiar with the trust mortgage of the Southern Pacific Railroad Company to D. O. Mills and Lloyd Tevis, trustees, dated April 1, 1875?

Mr. CALL.—Objected to as incompetent, immaterial, and irrelevant, and not the best evidence in the matter sought to be adduced. And, Mr. Redding, I will ask you to make the usual stipulation, that where objections are made to any question propounded to any witness during this examination before Mr. Nolan, the stenographer shall repeat the words "Same objection" to all subsequent questions until another objection shall be made, with the same effect as if such objection were set out in full; and so on from time to time as each objection shall be made, with the same effect as if the objection were set out in full.

Mr. REDDING.—I am perfectly agreeable that the words "Same objection," when inserted by the stenographer, shall include the last stated objection by the counsel, and have the same force and effect as if the last stated objection were repeated in full.

Mr. CALL.—Do you desire me to repeat the objection or allow the stenographer to do it as stated.

Mr. REDDING.—I say, without the necessity of having the objection repeated in full, I am willing that the words "Same objection" shall be equivalent to a complete reiteration of the objection in detail.

Mr. CALL.—I will state now to the stenographer that

wherever I object to any question, I desire to have him repeat the objection by stating "Same objection" until otherwise directed, in each instance.

Mr. REDDING.—Very well.

(Question 9 repeated.)

A. I am.

Q. 10. Are you a member of the firm of Speyer & Company?

(Same objection.)

A. Yes, sir.

Q. 11. Did the firm of Speyer & Company negotiate a sale of bonds of the Southern Pacific Railroad Company, under the trust mortgage referred to?

(Same objection.)

A. The firm of Speyer & Company issued a prospectus in respect to a portion of the bonds issued under the mortgage referred to.

Q. 12. Have you a copy of that prospectus with you?

(Same objection.)

A. I have not a copy with me here on my person. I have a copy in the office. This is one of the prospectuses of that issue. (Referring to paper handed to witness by counsel for defendants.)

Mr. REDDING.—The defendants offer in evidence prospectus issued by Messrs. Speyer & Company, of New York, in reference to the issue of a certain amount of the six per cent bonds mentioned in the trust mortgage of the Southern Pacific Railroad Company to D. O. Mills and Lloyd Tevis, trustees, dated April 1, 1875, which trust mortgage has heretofore been introduced in evidence in

this case, and ask that this exhibit now introduced be marked "Defendants' Exhibit before the Notary Public in New York No. 1."

(The paper is so marked by the notary.)

(Same objection.)

Q. 13. Will you state whether or not the land grant made by Congress to the Southern Pacific Railroad Company, of March 3, 1871, was one of the securities offered in connection with said bonds and relied upon in said trust mortgage and prospectus as an inducement for the purchase of said bonds?

(Same objection.)

A. It was.

Q. 14. Would the firm of Speyer & Company have undertaken the negotiation of these bonds without that security?

(Same objection.)

A. They would not.

Q. 15. I call your attention to that clause in the prospectus which reads as follows: "The number of acres of land embraced in the United States land grant and covered by the mortgage is estimated at upwards of 11,000,000 acres, of which it is stated by the company that over 7,000,000 acres appertain to portions of the road already completed. Of these there have been issued to the company patents for more than one million acres, and lists for selected lands are now pending with the United States Government for a large amount." Were those representations relied upon by you and relied upon

by the purchasers of these bonds as a portion of the security upon which the bonds were purchased?

(Same objection.)

A. They were relied upon by us, and, if our prospectus was relied upon at all by the purchasers of the bonds, it was relied upon by the purchasers of the bonds.

Q. 16. Will you state whether or not these bonds, issued under this trust mortgage heretofore referred to, are held in the open market for value received, by innocent purchasers, and in all of the various localities you have mentioned?

(Same objection.)

A. The bonds in question are held in England, in Holland, in Germany and in the United States, by the general public, who have bought them upon the prospectus in question, and subsequently; the holding is extremely scattered and it is safe to say has aggregated at times, if not now, approximately $30,000,000.

Q. 17. Are these bonds recognized as a standard security on the market?

(Same objection.)

A. They are.

Q. 18. And in the various localities you have mentioned?

(Same objection.)

A. They are.

Q. 19. Will you state whether or not they are dealt with similarly to other bonds issued and negotiated and sold by firms like yourselves?

(Same objection.)

A. I think I had better say how they are dealt in rather than make a comparison, as there are so many different ways of dealing with bonds under different issues, which I might not know about.

Q. 20. Very well; state it exactly as you wish?

(Same objection.)

A. The bonds are held more possibly, than usual by serious investors, who hold them for the interest they yield, and, as they may desire to realize the cash or may desire to purchase other securities, they sell them in amounts of anywhere from $1,000 to $100,000 or upwards. They have a market which might be said to be similar to that for United States Government bonds, or New York Central bonds or West Shore bonds. They pass from hand to hand, just as people feel disposed to get their cash for them, or exchange them for other securities.

Cross-Examined by Mr. CALL.

X. Q. 21. For whom did you act in the sale of these bonds?

A. Your question, I suppose, refers to the firm of Speyer & Company?

X. Q. 22. Who is your principal—that is, whom did the firm of Speyer & Company act for in the sale of the bonds?

A. In the main Speyer & Company acted for the firm of Speyer & Company, but the firm of Speyer & Company represented, besides themselves, to some extent—to what extent I cannot recall—other financial firms, commonly called members of the syndicate.

X. Q. 23. You probably misunderstand my question. For whom did Speyer & Company sell the bonds?

A. I am trying to explain that fully.

X. Q. 24. Very well.

A. Furthermore, in the issue of ten millions of bonds, they were including, beyond the amount owned by Speyer & Company, and the so-called members of the syndicate, an amount of option bonds—when I say option bonds I mean bonds upon which Speyer & Company and the members of the syndicate had an option, by reason of a firm purchase thereof—

X. Q. 25. They had an option to purchase these bonds, did they?

A. They had, by reason of a firm purchase of the bonds—an outright purchase of the bonds—an option to buy further amounts thereof.

X. Q. 26. You then purchased, as a firm, some of the bonds yourselves and you sold them as your own bonds—

A. (Interrupting.) The facts are these; I will give you the exact facts, which, as I recall them, are that the firm of Speyer & Company made a purchase of a certain amount of these bonds and formed a syndicate to take those bonds over, retaining for the firm of Speyer & Company an interest in said syndicate. The syndicate holding, including Speyer & Company, carries with it an option to buy further amounts thereof, which in all amounted to, as well as I remember, the ten million bonds offered under the prospectus.

X. Q. 27. From whom did you obtain the option to purchase the bonds?

A. It would be impossible to answer that question exactly without referring to the contracts made at the time. The contracting party might be one or the other of the corporations with which we have dealt, or individuals. It would be impossible for me to tell that without referring to the contracts; but I can say that the negotiations were carried on with Mr. C. P. Huntington, in one of his official capacities—not with him individually.

X. Q. 28. You don't know whether it was with him as a director or officer of the Southern Pacific Railroad Company, or the Pacific Improvement Company?

A. With whom the contract was made I could not tell without reference to the papers drawn at the time, because it is now something like thirteen years ago.

X. Q. 29. Who comprises the syndicate which purchased the bonds and sold them?

A. If I desired to give that information it would not be possible to do so, as you can well imagine at this period of time, without reference to books and papers; but I wouldn't give that information unless it was a matter of necessity that I should do so. It discloses the business of Speyer & Company, and, while I would not object to naming some parties whom I might remember, unless it was a compulsory matter I should not se[illegible] to disclose, for general public knowledge, my private affairs, or the private affairs of the firm of Speyer & Co., I should say.

Mr. REDDING.—I will state to the witness, on behalf of the defendants, that if the information called for by

the Government counsel should lead to the necessity of unfolding to the general public the private business of Speyer & Company, that does not refer to the general holding of these bonds in the market, I shall advise Mr. Salomon not to answer the question. That, of course, is a matter which you, Mr. Salomon, can state of your own knowledge whether it be so or not, and upon so stating I would instruct you as the case may be.

The WITNESS.—The information called for does not refer to the general holding of the bonds in the market in any shape or way that I can discover or see. It is simply a matter of an original partnership purchase by a syndicate, which relieved itself of its holding by selling the bonds, through the prospectus in question, to the general public, but the members of the syndicate in question are not known to the general public.

Mr. CALL. (To Mr. Redding).—I ask you if you rely upon the purchase by the syndicate mentioned, as being a purchase by persons, in good faith and for value, or otherwise?

Mr. REDDING.—I rely on the testimony of the witness given on the direct examination, showing that these bonds are held by the general public, for value received in open market, similar to United States bonds, and throughout the various monetary centers of the world.

Mr. CALL.—Do you reply upon the purchase by the syndicate as being such a purchase? Because if you do I should want to inquire into the purchase by the syndicate.

Mr. REDDING.—I do not; certainly not.

The WITNESS.—I might cover that. I will say that there is no difference between the purchase of Speyer & Company and the purchase by the syndicate. I was asked a question which I couldn't answer by simply saying the purchase was made by Speyer & Company and tell the truth. The purchase was made by Speyer & Company, but subsequently divided among the syndicate for the purpose of dividing the risk, but the purchase by the general public has absolutely nothing to do with it. To the general public it was an anonymous body. Is that clear.

Mr. REDDING.—That is perfectly clear, and I will state to the counsel for the Government that we are trying to show by this witness that these bonds have passed into the possession and holding of the general public for value received.

Mr. CALL.—If the claim is made by the defendants in this action that the purchase by the syndicate or by Speyer & Company for the syndicate is a purchase in good faith and for value such as claimed, it might be necessary to inquire into the knowledge of the parties and as to who constituted the syndicate. If you waive any such question as that and rely upon the sales by the syndicate, then I will not need to inquire as to who constitute the parties in interest.

Mr. REDDING.—I did not ask the witness anything about the syndicate at all, but simply asked about the bonds being sold, for value received, to the general public.

Mr. CALL.—Other than the syndicate?

Mr. REDDING.—Yes.

Cross-Examination Resumed by Mr. CALL.

X. Q. 30. I will ask if Mr. Huntington was one of the syndicate? A. Mr. Huntington was not.

X. Q. 31. Was Mr. Charles Crocker one of the syndicate?

A. Mr. Crocker was not one of the syndicate.

X. Q. 32. Nor Mr. Mark Hopkins?

A. Nor Mr. Mark Hopkins.

X. Q. 33. Was Leland Stanford one of the syndicate?

A. No, sir, he was not. Maybe I can help you by saying that, to the best of my knowledge, none of the parties interested in the Southern Pacific or any of their companies was interested in the syndicate.

X. Q. 34. So far as you know?

A. This purchase was made by bankers, and not in partnership with gentlemen who built the road or connected with its management, to the best of my knowledge.

X. Q. 35. Can you name the parties to whom you sold these bonds, or any of them?

A. Not at this date. I can say that the bulk of these bonds, when sold under the prospectus in question, were sold in Europe—were sold in London, in Amsterdam and in Frankfort-on-the-Main. There were hardly any bonds subscribed for in the city of New York or in the city of Boston at that time, except one amount of bonds which was subscribed for, but subsequently rebought; therefore the name of that party will probably not interest you, although that is the one name that I could give you.

If you wish to know it I can tell it, but I don't think it bears upon the matter.

X. Q. 36. Do you know whether any of the purchasers of these bonds were, of their own knowledge, acquainted with the terms and conditions of the mortgage or deed of trust of 1875?

A. You mean beyond the information contained in the prospectus in question?

X. Q. 37. Yes?

A. That I cannot tell you. My most positive belief is they were not acquainted with any other facts than those set forth in the prospectus in question.

X. Q. 38. Do you know whether any of the purchasers were acquainted with the terms and conditions of the act of Congress approved March 3, 1871?

Mr. REDDING.—Objected to as incompetent, immaterial, and not proper cross-examination; as calling for the opinion of the witness upon a matter with which he could not be familiar nor could he be competent to testify to.

A. My previous answer would cover that question.

X. Q. 39. Do you know, or did you know at the time of the sale of these bonds, when the Southern Pacific Railroad Company, the mortgagor therein named, was incorporated.

(Same objection.)

A. The date of the incorporation of the Southern Pacific Railroad Company of California? I have every reason to believe that was a fact known to the firm of Speyer & Company, inasmuch as the issue of the bonds

and the drawing of the prospectus was only possible after most through and careful examination and investigation of all facts pertaining to the question of value, and legal shape—legal position, you might say.

X. Q. 40. Did you know that the Southern Pacific Railroad Company, the mortgagor, was incorporated by the consolidation of a number of other railroad companies subsequent to the act of Congress of March 3, 1871?

Mr. REDDING.—Same objection, and the further objection that the Government counsel is stating in his question a legal opinion of his own, and I move that that portion of the question be stricken from the record.

A. I can't answer that question in any other language, I think, than the previous answer given.

X. Q. 41. That is, that you assume that you did know in regard to it?

(Same objection.)

A. I must assume that. I can't be expected, about thirteen years later, to be able to recite every fact that was then in my knowledge in connection with a large matter of this kind, or the knowledge of other members of my firm. What you ask me is a physical impossibility.

X. Q. 42 I believe you stated that you were familiar with the terms and conditions of the mortgage or deed of trust dated 1875, to D. O. Mills and Lloyd Tevis. Did you so state? A. As I remember it, I did.

X. Q. 43. What lands did you understand were granted to the Southern Pacific Railroad Company, upon which it was sought to make a mortgage?

A. The lands coming under the description in that mortgage.

X. Q. 44. The description of the lands in the mortgage? A. Exactly.

X. Q. 45. I will ask you to point out what that description of the lands is which contains the lands in question?

A. I don't know anything about the suit. (Referring to the trust mortgage.) The description begins at the foot of page third of the trust mortgage and covers a portion of page 4.

X. Q. 46. Did you know that Congress had made a grant to the Atlantic & Pacific Railroad Company of California?

(Same objection.)

A. I am unable to answer that question at this date.

X. Q. 47. Can you state what investigations were made by any of the proposed purchasers of bonds, or purchasers of bonds, in regard to the title of the Southern Pacific Railroad Company to any particular lands?

(Same objection.)

A. What do you mean by purchasers of the bonds?

X. Q. 48. Persons to whom you sold bonds?

A. What we call the general public.

X. Q. 49. Yes?

A. I think I have answered that question under another answer.

X. Q. 50. You might just state then what it was.

A. As I remember, the answer was, to the best of my knowledge these bonds were bought by the general pub-

lic upon the statements made in the prospectus mentioned. The prospectus mentioned referred to the trust mortgage which, I think the prospectus says, was on file and could be referred to, if desired, but I doubt very much whether any reference was made to it as the prospectus gave a general description of it.

W. SALOMON.

Subscribed and sworn to before me this 8th day of November, 1893.

[Seal] PATRICK A. NOLAN,

Notary Public, Kings County. Certificate filed in N. Y. Co.

Adjourned to Monday, November 6, 1893, at 11 o'clock A. M.

Defendants' Exhibit Before the Notary Public in New York No. 1.

Issue of $10,000,000 Six Per Cent First Mortgage Railroad and Land Gold Bonds of the Southern Pacific Railroad Co. of California.

In bonds to bearer of $1,000 and $500 each, with provision for Registration of Bonds in the name of holder if desired. Issue April 1, 1875; October 1, 1875, and October 1, 1876; and payable thirty years from date.

Interest at six per cent per annum, payable half yearly on the 1st April and 1st October in gold, at New York.

Messrs. Speyer & Co., New York,

Messrs. Brewster, Basset & Co., Boston,

Mr. Laz. Speyer Ellissen, Frankfort-on-Main,

Messrs. Speyer Brothers, London,

Messrs. Teixeira de Mattos Bros., Amsterdam,

Mr. E. J. Meyer, Berlin,

Offer the above Bonds for subscriptions.

The subscription list will be opened on Thursday, 11th March, and closed on Friday, 12th March.

The issue price is 97½ per cent ex. April 1st, 1880—Coupon, payable as follows:

5 per cent on application.
15 per cent on allotment.
40 per cent on April 15th, 1880.
37½ per cent on May 15th, 1880.

Allottees may anticipate installments under discount at the rate of 5 per cent per annum.

These Bonds are secured by a first mortgage on the railroad and telegraph line, rolling stock, fixtures, land and franchises of the Southern Pacific Railroad of California, under which $46,000,000 Bonds can be issued, of which $29,520,000 (of which the above $10,000,000 are a part) have thus far been issued. The total length of projected road is 1,150 miles, made up as follows: From San Francisco to Soledad, 143 miles; Carnadero to Tres Pinos, 18 miles; Soledad to Poso Junction (Lerdo), 160 miles; Huron to Yuma, 529 miles; Los Angeles to Wilmington, 22 miles; Mojave Junction to Colorado river (estimated), 278 miles; of which 712 miles are completed and in operation, viz: From San Francisco to Soledad, 143 miles; Carnadero to Tres Pinos 18 miles; Huron to Yuma, 529 miles; Los Angeles to Wilmington, 22 miles.

These 712 miles of railroad are divided into the Northern and Southern divisions.

The Northern division runs from San Francisco to Soledad, and from Carnadero to Tres Pinos, in all 161 miles.

The Southern division extends from Huron to Yuma, with a branch road from Los Angeles to Wilmington, in all 551 miles, and is intersected at Goshen by the San Joaquin Branch of the Central Pacific R. R.

The net earnings over operating expenses for these divisions are stated by the Company to have been:

	For the Northern Division.	For the Southern Division through Rental from Central Pacific Railroad Company, Lessee.	Total.
1878.	$499,344.03	$1,656,360.00	$2,155,704.03
1879.	362,761.78	1,635,554.93	1,998,316.71

Or more than sufficient to meet the interest on the amount of outstanding Bonds.

The Company states that the decrease in the earnings of the Northern division in 1879 was owing in part to temporary causes, which, having been recently removed, a return to the former scale of earnings is promised.

The Northern division is separated from the Southern division by a gap of about 100 miles by one route, from Tres Pinos to Huron, and by a gap of about 160 miles by another route, from Soledad to Poso Junction. The San Joaquin Valley branch of the Central Pacific Railroad furnishes the Southern division with an outlet both to San Francisco and eastwardly over the main line of the Central Pacific Railroad, and in view of common interests,

the Central Pacific Railroad Company has taken a lease of the Southern division of the Southern Pacific Railroad of California, for a period of not less than five years from January, 1880, and by the terms of the lease "if a railroad is not completed in five years from that date, so that there is a connection of the Southern Pacific Railroad of California with the eastern system of railroads on what is known as the 32d parallel line, the lease shall be extended until such connection is made, provided such extension does not exceed five years longer, or ten years in all," from January, 1880. By the terms of the lease, "the net rental agreed to be paid during the continuance of this lease and any extension thereof, shall be two hundred and fifty dollars a month, or three thousand dollars a year per mile" (being, at present, on about 551 miles, equals about $1,650,000 annual rental), "and if, for any cause, it shall be reduced by mutual consent of the parties that the annual amount of such rental as reduced shall, at least, be sufficient to pay all the interest that has been, or may be agreed to be, paid in any one year on any bonds of the party of the first part" (Southern Pacific Railroad Company of California), "herein outstanding during the continuance of the lease."

The number of acres of land embraced in the United States land grant and covered by the mortgage is estimated at upwards of 11,000,000 acres, of which it is stated by the company that over 7,000,000 acres appertain to portions of the road already completed. Of these there have been issued to the company patents for more than one million acres, and lists for selected lands are now

pending with the United States Government for a large amount. The net cash avails of the land sales are to be applied to the repurchase or ultimate payment of these bonds; $334,000 are stated by the company to have been redeemed up to December 31, 1879, from the surplus so available.

A sinking fund of $100,000 a year, commencing in 1882, from the earnings of the road is provided as a further security for the loan.

It is contemplated that the Southern Pacific Railroad of California will form part of a through line to El Paso where, meeting with other roads projected to that point, an outlet to the Gulf of Mexico and to the Atlantic seaboard may be obtained. At its terminus at Yuma, it connects with the Southern Pacific Railroad of Arizona, an independent but closely affiliated company, which during the past year was built and operated to Casa Grande, a distance of about 182½ miles, and is since being rapidly pushed to the vicinity of Tucson, about 65 miles further east.

Applications must be made on the annexed form.

The allotment of the loan, which will be made at the discretion of the issuing houses, will be made as early as possible after the subscription is closed. If no allotment is made, the deposit will be returned in full, and if only a portion of the amount applied for be allotted, the balance of the deposit will be applied toward the payment of the amount due on allotment.

In default of payment of the sum due on allotment, or any subsequent installments the allotments and all payments will be subject to forfeiture.

Upon payment of the deposit on allotment, scrip certificates to bearer will be issued, which will be exchanged for definite bonds as soon as the issue price is paid up.

The mortgage deed, copy of lease and official statements can be inspected, by intending subscribers, at the office of Speyer & Co., 52 Exchange Place, New York, or Messrs. Brewster, Basset & Co., 35 Congress Street, Boston.

March 8th, 1880.

[Endorsed]: Deft. Exhibit before the Notary Public in New York, No. 1. P. A. Nolan, Notary Public.

Defendants' Exhibit No. 58.

GEORGE T. FOLSOM, called as a witness on behalf of the defendants, being first duly sworn, testified as follows:

Mr. SINGER.—Q. Where do you reside?

A. In San Francisco, 1001 Pine street, corner of Taylor, Hotel Bella Vista.

Q. Are you an officer of the Southern Pacific Railroad Company, one of the defendants in this suit?

A. I am not; I am simply the general accountant of the Southern Pacific Railroad Company.

Q. For how long have you held that office?

A. Twenty-three years.

Q. Have you kept or have you now in your custody a record of the bonds issued and sold by the Southern Pacific Railroad Company under the trust deed made on

April 1st, 1875, by that company to D. O. Mills and Lloyd Tevis, trustees, in trust?

Mr. CALL.—It is understood that the testimony of this witness is objected to as incompetent, immaterial, and irrelevant?

Mr. SINGER.—It will be so understood.

A. Yes, sir.

Q. Please state from your records the total amount of such bonds sold by the Southern Pacific Railroad Company.

A. We treat as sold by the Southern Pacific Railroad Company all bonds issued; if they are paid out to the contractors for the building of the road we treat them as sold; that is to say, they have paid us for those bonds in road which they have built for us.

Q. What is the total amount of such sales prior to March 3d, 1887?

A. The sale of the bonds of 1875 from their date April, 1875, to March 3d, 1887, would be $14,626,000 to the Western Development Company, and $8,476,000 to the P. I. Company, making in all $32,102,000.

Q. And some of them to the Contract and Finance Company?

A. Those were in the old bonds, which I could not very well tell you about; the 1875 bonds were issued to cover a former issue of bonds retired, and then to go on with the construction of the road.

Mr. CALL.—Q. That is the total amount issued between those dates under the mortgage of 1875?

A. Yes, sir; that is the total amount between those

dates under the mortgage of 1875; that is, between the dates of April 1st, 1875, and the date of March 3d, 1887.

Mr. SINGER.—Q. Were all those sales genuine and made for considerations actually paid?

A. They were.

Q. Were the bonds sold at their face value or for some other value?

A. I can say in answer to that that all those bonds were sold at par; yes, sir; they were all sold at par, taken by the contractors; in other words, they were all sold to the contractors of the road in payment for the road; we received as pay for those bonds the road itself, and they were taken by the contractors at par.

Q. To what extent have these bonds been redeemed?

A. We have redeemed bonds to the extent of eight million and some odd thousand dollars, nearly nine million dollars, and those redemptions we treat as applying to the previous issues; in other words, the old bonds were replaced by the new bonds; now, the new bonds, the total issue being an addition to the amount of the old bonds, to the bonds paid out, as I have stated, for the construction of the road, to be added to that, it was from those first issues that these redemptions were made; in other words, we consider them as redeeming the oldest bonds.

Q. Then the nine million of dollars of bonds redeemed have been applied to the payment of bonds other than the $32,000,000 that you have mentioned as issued subsequent to April, 1875?

A. That is a question I would have to answer in this way: the total issue of our bonds, that is the present

issue of bonds, the 1875 bonds issued in retirement of the old bonds, and in the construction of the new road, of all those bonds that were issued there has been a redemption of somewhere of nine million dollars in round numbers; now, we treat that as applying to the earlier bonds, naturally.

Mr. CALL.—Well, that was the earlier bonds?

A. Not necessarily; it was the bonds of 1875, because those bonds replaced the old bonds, and we may redeem bonds of numbers that were issued only six months ago.

Mr. SINGER.—Q. What amount of bonds issued under the trust mortgage of April 1st, 1875, are still outstanding unredeemed?

A. I would have to get additional memoranda.

Q. Will this memorandum help you any (showing)?

A. Yes, sir; this will; we redeemed, as I have stated here, to December 31st, 1895, $8,617,500.

Q. Have you redeemed any of the 1875 bonds since December 31st, 1895?

A. No, we have not; none at all.

Q. Then the figure $8,617,500 represents the extent of the redemption of the 1875 bonds to date?

A. They do; yes, sir.

Cross-Examination.

Mr. CALL.—Q. The amount outstanding, then, is the difference between those figures? A. Yes, sir.

Q. The difference between the sum of $23,102,000 and $8,617,500? A. Yes, sir.

Q. All of those bonds were issued to the Pacific Improvement Company or to the Western Development Company?

A. Yes, sir; all these bonds, the figures of which I have given you.

Q. What was the date of that old mortgage which you spoke of redeeming some of the bonds of?

A. I don't remember the date of that mortgage; I don't like to answer unless I know absolutely; of course, I can ascertain the date, but I have so many things to think of in the way of figures that I don't carry the thing in my mind; the mortgage having ceased many years ago, of course I dismissed it from my recollection entirely.

Mr. SINGER.—Will you excuse the signature of Mr. Folsom to his deposition?

Mr. CALL.—Yes, sir.

Defendants' Exhibit No. 59.

FRANK S. DOUTY, called as a witness on behalf of the defendants, being first duly sworn, testified as follows:

Mr. SINGER.—Q. Are you an officer of the Pacific Improvement Company? A. I am.

Q. Were you at any time an officer of the Western Development Company? A. I was.

Q. Did either of those companies ever purchase bonds issued under the trust deed executed by the Southern Pacific Railroad Company to D. O. Mills and Lloyd Tevis, trustees?

Mr. CALL.—It is understood that the testimony of this witness is objected to as incompetent, immaterial, and irrelevant?

Mr. SINGER.—That is my understanding.

A. In the performance of our business in railroad building we acquired these bonds; that was a part of the consideration for building the roads.

Q. Did those companies accept the bonds in payment of contract price for the construction of railroad?

A. On account of the contract price; there were other considerations besides bonds.

Q. Were they taken at their face value?

A. Yes.

Q. And in exchange for that did the companies credit them with that amount of money on the contract price for construction? A. They so treated it, I believe.

Q. Have you any memoranda showing to what extent the bonds were taken by the Western Development Company, and to what extent by the Pacific Improvement Company?

A. Yes, sir. (Producing memoranda.) The Southern Pacific Railroad Company paid the Western Development Company $14,576,000 in bonds at par; they paid the Pacific Improvement Company $7,962,000 in bonds at par, making a total of $22,538,000 in bonds at par.

Q. Do you know to what extent those bonds have been redeemed? A. I am unable to say.

Q. What disposition, if any, did the Western Development Company make of its bonds? A. Sold them.

Q. To people at large?

A. Yes, sir; wherever they could find buyers.

Q. To various individual purchasers?

A. Yes, sir.

Q. What disposition did the Pacific Improvement Company make of the bonds taken by it?

A. The same disposition.

Cross-Examination.

Mr. CALL.—Q. How many of those bonds do they own now? A. They do not own any.

Q. How many of those bonds do the Western Development Company own now?

A. They do not own any.

Q. Do you know to whom they sold those bonds?

A. I could not say from recollection; I presume I could find records of the transactions in the accounts as they occurred, but that would be no guide as to who owns them now; they are nearly all held in Europe, or in the Eastern States, I believe.

Q. The Western Development Company is a corporation organized under the laws of this State?

A. Yes.

Q. And the same of the Pacific Improvement Company? A. Yes.

Q. The officers and stockholders of the Pacific Improvement Company were the same as the Southern Pacific Railroad Company, I believe? A. No.

Q. Substantially?

A. None of the officers, I think, were the officers of the Pacific Improvement Company; some of the directors of

the Southern Pacific were the owners of the principal stock of the Pacific Improvement Company.

Q. And also of the Western Development Company?

A. At present; yes, sir.

Q. They were at the time of the construction of the road?

A. I mean by saying "at present, yes," the owners of the Western Development Company originally died, and did not participate in the ownership of the Pacific Improvement Company.

Q. Mr. C. P. Huntington, Mr. Leland Stanford, Mr. Charles Crocker, Mr. Mark Hopkins, they were directors of both the Southern Pacific Railroad Company and the Pacific Improvement Company and the Western Development Company?

A. I think none of them were ever directors of the Pacific Improvement Company or the Western Development Company.

Q. But they owned the stock?

A. They owned the stock; they were the principal owners of the stock.

Redirect Examination.

Mr. SINGER.—Q. Those bond purchases of the Western Development Company and Pacific Improvement Company were all made prior to March 3d, 1887, were they? A. Yes.

Q. And the sales of the bonds were also made prior to that date? A. Yes.

Mr. SINGER.—Mr. Call, will you excuse the signature of Mr. Douty from his deposition?

Mr. CALL.—Yes, sir.

Defendants' Exhibit No. 60.

S. S. M. (4-207.) W. J. M.

Department of the Interior.

General Landoffice,

Washington, D. C., Sept. 29, 1897.

I, Binger Hermann, commissioner of the general land-office, do hereby certify that the annexed copies relative to the preparation of a map to show the adopted line of location of its road by the Texas and Pacific Railroad Company are true and literal exemplifications from the files and records of this office.

In testimony whereof, I have hereunto subscribed my name and caused the seal of this office to be affixed at the city of Washington on the day and year above written.

[Seal] BINGER HERMANN,

Commissioner of the General Landoffice.

J. I. P. A. M.

2479-'96.

L. & R. R. Div.

Department of the Interior.

Washington, April 24, 1896.

The Commissioner of the General Landoffice.

Sir: I enclose herewith a letter from the attorney general, dated the 17th instant, asking for a certified map,

showing the public surveys, on which "shall be protracted the line of definite location of the Texas and Pacific Railroad," as described for use in the suit against the Southern Pacific Railroad Company.

The suggestion is also made therein that all patents, certificates, and listings of lands in the disputed limits be suspended till the suit is terminated, and that no act that will seemingly recognize any right of the Southern Pacific Railroad Company in such lands be performed.

In order that the request of the attorney general may be acceded to, I have to direct that a map be prepared on which shall be protracted the adopted line of location by the Texas and Pacific Railroad, and, with that end in view, I enclose herewith the annual reports of the Texas and Pacific Railroad Company for the years 1874 and 1876 containing the data required in preparing the map.

You are also directed to suspend action relative to recognizing the Southern Pacific Railroad Company in any way so far as the disputed limits are concerned.

On completion of the map you will transmit it to the department and return the foregoing papers.

Very respectfully,

HOKE SMITH,

Secretary.

Refer in reply to
this initial: H. K.
"L."

Department of the Interior.

General Landoffice,
Washington, D. C., April 28, 1896.

Address only the
Commissioner of the General Landoffice.

The Secretary of the Interior.

Sir: In reply to yours of the 24th inst., I herewith enclose a report of the chief draftsman of the general landoffice with reference to the *complication* of a certified map showing the public surveys on which shall be protracted the line of definite location of the Texas and Pacific Railroad, as requested in the letter of the honorable attorney general of the 17th inst.

Very respectfully,

S. W. LAMOREUX,
Commissioner.

Department of the Interior.

General Landoffice,

"L." Washington, D. C., April 28, 1896.

Address only the
Commissioner of the General Landoffice.

The Commissioner of the General Landoffice.

Sir: With reference to the protraction of the line of definite location of the Texas and Pacific Railroad, showing the public surveys contiguous thereto as requested in the letter of the honorable attorney general to the honorable secretary of the interior dated April 17, 1896, and forwarded to you with letter of transmittal of April 24, 1896, by the honorable secretary of the interior, I have the honor to report that so far as the desired protraction is concerned I find:

1st. That the line as shown on the map accompanying the 5th annual report of the board of directors of the Texas and Pacific Railroad Company to the stockholders, August 8, 1876, is so general in character and so devoid of control as to make it practically impossible to apply the line defining this route to the township subdivisions by which it is surrounded; and

2nd. That applying the breadth of the general dotted black line defining the route on this map to the scale of said map, this line is found to be nearly the breadth of a township.

It therefore follows that even if there should have been sufficient orientation or control for the proper placement of this line, the fact that in plotting the same it would be impossible to enter into detail with reference to sections or lesser subdivisions, but that it would cover nearly the whole township, makes it impossible for this office to comply with the request of the honorable secretary of the interior.

Very respectfully,

HARRY KING,

Chief of the Drafting Division.

M. N. 46344. 1896. W. J. M.

Refer in reply to
this initial:
"F."

Department of the Interior.

General Landoffice,

Washington, D. C., April 29, 1896.

Address only the
Commissioner of the General Landoffice.

The Honorable the Secretary of the Interior.

Sir: Referring to my letter of this date, stating that it is impossible to protract the line of the Texas & Pacific Railroad, as shown by the report for 1876 of the Texas & Pacific R. R. Co., with the lines of the public surveys, in

this connection and in further reply to your letter of April 24, I call attention to the following extract from the opinion of Assistant Attorney General Montgomery, rendered after the forfeiture of the Texas Pacific Railroad grant, which opinion was approved by Secretary Lamar, November 2, 1885 (4 L. D. 217).

"It will be observed that the first and chief object of the above-named act was to secure the building of a railroad from Marshall, Texas, to the Bay of San Diego, California; and secondly, to connect said railroad, when built, with the city of San Francisco. And it appears, from appellants' own showing, that although a map of general route of said Texas Pacific Railroad was filed in the general landoffice, yet not a mile of said road was ever built, nor was its line of definite location ever established."

There is not, and never has been, filed in this office a map which is described in terms as a map of "definite location" of the Texas and Pacific Railroad. By departmental letter of September 2, 1871, there was transmitted to this office a map therein described as "a map of the general route" of said railroad, and it was according to the line of road shown thereon that the limits of the grant for said road were adjusted, and lands were withdrawn.

In reference to the direction to suspend action relative "to recognizing the Southern Pacific Railroad Company in any manner so far as the disputed lands are concerned," I beg leave to report that in the decision of Secretary Lamar referred to of November 2, 1885, it will be seen that he held that the Southern Pacific Railroad Company had no right to the lands within the overlap of the two grants,

and that since then this office has been governed by that decision.

Very respectfully,

S. W. LAMOREUX,

Commissioner.

[Endorsed]: U. S. v. S. P. Consd. 675, 587, and 662. Defendants' Exhibit No. 60. Stephen Potter, Special Examiner.

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FOLD OUT IS TOO LARGE TO BE FILMED

[Endorsed]: U. S. v. S. P. Consd. 675, 587, and 662. Defendants' Exhibit No. 76. Stephen Potter, Special Examiner.

United States vs. S. P. R. R. Co. et al. Consolidated Nos. 675, 587, and 662. Report of special examiner. Opened and filed Mar. 29, 1899. Wm. M. Van Dyke, Clerk.

Circuit Court of the United States, Ninth Circuit, Southern District of California.

Consolidated No. 675.

No. 587.

UNITED STATES OF AMERICA,

Plaintiffs,

vs.

SOUTHERN PACIFIC RAILROAD COMPANY, D. O. MILLS and HOMER S. KING, Trustees, CENTRAL TRUST COMPANY OF NEW YORK, SOUTHERN PACIFIC COMPANY OF KENTUCKY, and COLORADO IRRIGATION CO.,

Defendants.

No. 662.

UNITED STATES OF AMERICA,

Plaintiffs,

vs.

SOUTHERN PACIFIC RAILROAD COMPANY,

Defendant.

No. 675.

UNITED STATES OF AMERICA,

Plaintiffs,

vs.

SOUTHERN PACIFIC RAILROAD COMPANY, D. O. MILLS and HOMER S. KING, Trustees, CENTRAL TRUST COMPANY OF NEW YORK, SOUTHERN PACIFIC COMPANY OF KENTUCKY, and COLORADO IRRIGATION CO.,

Defendants.

Assignment of Errors.

The above-named defendants, by the undersigned, their counsel and attorneys, in connection with their petition for appeal herein, say that the decree in the above-entitled cause, made and entered on August 24th, 1899, is erroneous and against their just rights, in the following particulars:

I.

The Court erred in overruling the defendants' plea to the plaintiffs' bill of complaint in the said suit No. 587.

II.

The Court erred in deciding that the United States is the owner, by title in fee simple absolute, or the owner in anywise, of the lands, or any part thereof, described in subdivision "First" of the said decree; because, as shown by the evidence:

1st. A large portion of the said lands are odd sections, situated within the primary limits of the land grant made to the defendant Southern Pacific Railroad Company by

section 23 of the act of Congress, entitled "An act to incorporate the Texas Pacific Railroad Company, and to aid in the construction of its road, and for other purposes," approved on March 3rd, 1871, not embraced by any exception to the grant of lands thereby made; and the defendant Southern Pacific Railroad Company duly constructed the railroad contemplated, in aid of which the said grant was made, and fully performed the conditions imposed by the said act of Congress; and the railroad so constructed was duly accepted and approved by the proper officers of the United States. The defendants are, therefore, owners by title fee simple, absolute, and indefeasible, of all the lands in this paragraph referred to.

2nd. The remainder of the said lands are odd sections, situated within the indemnity limits of the land grant made to the defendant Southern Pacific Railroad Company by the act of Congress mentioned in the next preceding paragraph hereof, and are not embraced by any exception to the grant of lands thereby made; and all the odd sections within the primary limits and indemnity limits of the land grant made to the defendant Southern Pacific Railroad Company by the said act of Congress, not finally disposed of by the United States prior to March 3d, 1871, are insufficient to make or equal the amount of land thereby granted to the defendant Southern Pacific Railroad Company. For these reasons, and the other reasons set forth in the next preceding paragraph hereof, the defendants are also the owners by title in fee simple, absolute, and indefeasible, of all the lands referred to in this paragraph.

3rd. Some of the lands referred to in the next preceding paragraph hereof were duly selected by the defendant Southern Pacific Railroad Company, under direction of the secretary of the interior, as indemnity lands granted to it by the said act of Congress. As to all which selected lands the defendants are, for the reasons hereinbefore set forth, entitled to the issue of patents from the United States to the defendant Southern Pacific Railroad Company; and are also entitled to select, and receive patents for, all of the lands referred to in the 1st and 2d paragraphs hereof, which remain unselected.

4th. The defendants D. O. Mills and Homer S. King are trustees under a deed of trust duly made and executed to them on April 1st, 1875, by the defendant Southern Pacific Railroad Company, and the defendant Central Trust Company of New York is trustee under a deed of trust made and executed to it on August 25th, 1888, by the defendant Southern Pacific Railroad Company; which deeds of trust conveyed all the lands described in the first subdivision of the said decree, to secure the payment of, and out of the proceeds of the lands so conveyed to redeem and pay, a large number of bonds issued and sold by the defendant Southern Pacific Railroad Company for several millions of dollars paid to it by numerous bona fide purchasers thereof, who still hold the bonds so purchased, unpaid. The said trustee defendants are, therefore, bona fide purchasers of all the lands so conveyed to them; and as to such of those lands as have been patented by the United States to the defendant Southern Pacific Railroad Company, the right and title of the said trustee

defendants is confirmed by the act of Congress, entitled "An act to provide for the extension of time within which suits may be brought to vacate and annul land patents, and for other purposes," approved on March 2d, 1896.

III.

The Court erred in ordering, adjudging, or decreeing that the defendants, either or any of them, be enjoined or restrained from having or claiming any right, title or interest in, or lien upon, all or any of the lands described in the first subdivision of the said decree, for the reasons set forth in assignment "II" hereof.

IV.

The Court erred in ordering, adjudging, or decreeing that the title to the lands described in the first subdivision of the said decree is quieted in the United States, for the reasons set forth in assignment II hereof.

V.

For the reasons hereinbefore assigned, the Court erred in ordering, adjudging, or decreeing "that the parties to these consolidated cases, plaintiffs and defendants, shall each pay their own costs"; and in not adjudging that the defendants have and recover their costs.

Wherefore, the defendants, appellants, pray that the said decree be reversed in all the respects and particulars herein assigned and specified as error; and that the said Circuit Court be directed to enter a decree dismissing the

bill of complaint of the plaintiff in each and all of the cases mentioned on the title page of the said decree.

WM. SINGER, Jr., and
W. H. H. HART,
Attorneys for the Defendants.

WM. F. HERRIN,
Counsel for the Defendants.

Circuit Court of the United States, Ninth Circuit, Southern District of California.

Consolidated No. 675.

No. 587.

UNITED STATES OF AMERICA,

Plaintiffs,

vs.

SOUTHERN PACIFIC RAILROAD COMPANY, D. O. MILLS and HOMER S. KING, Trustees, CENTRAL TRUST COMPANY OF NEW YORK, SOUTHERN PACIFIC COMPANY OF KENTUCKY, and COLORADO IRRIGATION CO.,

Defendants.

No. 662.

UNITED STATES OF AMERICA,

Plaintiffs,

vs.

SOUTHERN PACIFIC RAILROAD COMPANY,

Defendant.

No. 675.

UNITED STATES OF AMERICA,

Plaintiffs,

vs.

SOUTHERN PACIFIC RAILROAD COMPANY, D. O. MILLS and HOMER S. KING, Trustees, CENTRAL TRUST COMPANY OF NEW YORK, SOUTHERN PACIFIC COMPANY OF KENTUCKY, and COLORADO IRRIGATION CO.,

Defendants.

Petition for Appeal.

The above-named defendants, conceiving themselves aggrieved by the decree made and entered herein on August 24th, 1899, appeal from the said decree to the United States Circuit Court of Appeals for the Ninth Circuit, for the reasons specified in their assignment of errors filed herewith; and they pray that their appeal may be allowed and that a true copy of the record, opinion of the Court, assignment of errors, and all proceedings in the cause, under the seal of this Court and the hand of its clerk, be sent to the United States Circuit Court of Appeals for the Ninth Circuit, at San Francisco, California.

Your petitioners further pray that, upon giving a good and sufficient bond, to be approved by this Court, all proceedings in this cause, and upon the said decree, may be stayed pending their appeal.

Dated October 30th, 1899.

WM. SINGER, Jr., and
W. H. H. HART,
Attorneys for the Defendants.

WM. F. HERRIN,
Counsel for the Defendants.

Order Allowing Appeal.

The foregoing claim of appeal, and prayer for supersedeas, are allowed and granted; the supersedeas to take effect upon the filing of a good and sufficient bond in the sum of three thousand dollars, conditioned that the appellants shall prosecute their appeal to effect, and answer all damages and costs if they fail to make their appeal good.

It is further ordered that a true copy of the record, opinion of the Court, assignment of errors, and all proceedings in the cause, under the seal of this Court and the hand of its clerk, be sent to the United States Circuit Court of Appeals for the Ninth Circuit, at San Francisco, California.

Los Angeles, October 30th, 1899.

ROSS,
Circuit Judge.

Circuit Court of the United States, Ninth Circuit, Southern District of California.

Consolidated No. 675.

No. 587.

UNITED STATES OF AMERICA,

Plaintiffs,

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SOUTHERN PACIFIC RAILROAD COMPANY, D. O. MILLS and HOMER S. KING, Trustees, CENTRAL TRUST COMPANY OF NEW YORK, SOUTHERN PACIFIC COMPANY OF KENTUCKY, and COLORADO IRRIGATION CO.,

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Defendants.

Bond on Appeal.

We, John D. Bicknell, and J. A. Muir, both of the county of Los Angeles, State of California, are held and firmly bound to pay unto the United States of America the sum of three thousand dollars, for the payment of which, well and truly to be made, we bind ourselves, and each of us, our heirs, executors, and administrators, jointly and severally, firmly by these presents.

The above-named defendants have been allowed an appeal to the United States Circuit Court of Appeals for the Ninth Circuit, and a supersedeas from the decree entered in the above-entitled court and cause on August 24th, 1899; and the condition of this obligation is, that if the

defendants shall prosecute their said appeal to effect, and answer all damages and costs, if they fail to make their appeal good, then this obligation shall be void; otherwise to remain in full force.

Dated, signed, and sealed on October 30th, 1899.

JOHN D. BICKNELL. [Seal]
J. A. MUIR. [Seal]

State of California, } ss.
County of Los Angeles.

John D. Bicknell and J. A. Muir, being duly sworn, each for himself says: I am one of the sureties on the foregoing bond, and subscribed my name thereto.

I am a resident of and freeholder within the county of Los Angeles, State of California, and am worth the sum of three thousand dollars, over and above all my just debts and liabilities, in property within the said county which is not exempt from execution.

JOHN D. BICKNELL.
J. A. MUIR.

Subscribed and sworn to before me on October 30th, 1899.

[Seal] R. W. DARBY,
Notary Public in and for the County of Los Angeles, State of California.

[10c. Int. Rev. Stp. Canceled.]

The foregoing bond is approved.

ROSS,
Circuit Judge.

[Endorsed]: Con'd No. 675. U. S. Circuit Court, Ninth Circuit, Southern District of California. United States of America vs. Southern Pacific Railroad Co. et al. Assignment of errors, petition for allowance of appeal, order allowing appeal, bond on appeal. Received copies of each of above this 30th October, 1899. Jos. H. Call, attorney for plaintiff. Filed Oct. 30, 1899. Wm. M. Van Dyke, Clerk. Wm. Singer, Jr., rooms 61-2, Union Trust Building, *N. E. cor. 2nd & Mission Sts.*, San Francisco, Cal., Atty. for S. P. R. R. Co. et al.

Circuit Court of the United States, Ninth Circuit, Southern District of California.

Consolidated No. 675.

No. 587.

UNITED STATES OF AMERICA,

Plaintiffs,

vs.

SOUTHERN PACIFIC RAILROAD COMPANY, D. O. MILLS and HOMER S. KING, Trustees, CENTRAL TRUST COMPANY OF NEW YORK, SOUTHERN PACIFIC COMPANY OF KENTUCKY, and COLORADO IRRIGATION CO.,

Defendants.

No. 662.

UNITED STATES OF AMERICA,

Plaintiffs,

vs.

SOUTHERN PACIFIC RAILROAD COMPANY,

Defendant.

No. 675.

UNITED STATES OF AMERICA.

Plaintiff,

vs.

SOUTHERN PACIFIC RAILROAD COMPANY, D. O. MILLS and HOMER S. KING, Trustees, CENTRAL TRUST COMPANY OF NEW YORK, SOUTHERN PACIFIC COMPANY OF KENTUCKY, and COLORADO IRRIGATION CO.,

Defendants.

Stipulation.

It is mutually agreed by and between all parties to this case, consolidated No. 675, as follows:

I.

That the order of dismissal made herein on January 7th, 1898, includes all lands described or referred to in the plaintiff's amended bill of complaint filed in this case consolidated No. 675, on May 26th, 1896, which lie within thirty miles on either side of the line of location of the Atlantic & Pacific Railroad, or which lie within thirty miles on either side of the line of route shown on the map

referred to in the joint resolution of Congress entitled "Joint Resolution concerning the Southern Pacific Railroad of California," approved on June 28th, 1870.

II.

That the following documents, comprising certain of the pleadings filed and portions of the evidence introduced, may be omitted from the transcript of record on appeal to the United States Circuit Court of Appeals; as such documents are deemed irrelevant and immaterial to any issues or controversies presented by the case, to wit:

Plaintiff's amended bill of complaint, filed on March 16th, 1896.

Plaintiff's amended bill of complaint, filed on April 13th, 1896.

Amendments to the plaintiff's bill of complaint, filed on May 14th, 1896.

Defendants' Exhibit No. 5, being deposition of Jerome Madden in case No. 184 on the docket of this court.

Defendants' Exhibit No. 7, being deposition of Wm. Hood in case No. 184 on the docket of this court.

III.

That the following documents introduced in evidence shall be omitted from the transcript of record on appeal to the United States Circuit Court of Appeals, as such documents are duplicates, to wit:

Defendants' Exhibits Nos. 13, 14, 15, 16, 17, and 18, being maps of the location and construction of the South-

ern Pacific railroad, and duplicates of the maps in evidence as Defendants' Exhibits Nos. 24, 25, 26, 27, and 28, hereinafter mentioned.

IV.

That the hereinafter mentioned documents, introduced in evidence, shall be sent by the clerk of this court to the United States Circuit Court of Appeals, as original documents, part of the record on appeal, requiring inspection, under subdivision 4 of rule 14 of the United States Circuit Court of Appeals; such documents to constitute part of the record, but not to be printed unless the Court, or counsel, should direct that all, or certain thereof, be printed. And in event this case is finally appealed to the United States Supreme Court, the clerk of the United States Circuit Court of Appeals shall send the same documents with the transcript of record to the United States Supreme Court, as original documents, part of the record on appeal, requiring inspection, under subdivision 4 of rule 8 of the United States Supreme Court; such documents to constitute part of the record, but not to be printed unless the Court, or counsel, should direct that all, or certain thereof, be printed, to wit:

Plaintiff's Exhibit No. 2, being map of general route of the Texas Pacific railroad, filed with the secretary of the interior on September 2d, 1871.

Plaintiffs' Exhibits Nos. 4, 5, 6, 7, and 8, being certified copies of certain township plats.

Defendants' Exhibit No. 24, being map of the 4th section of the Southern Pacific railroad as located and con-

structed, filed with the secretary of the interior with the commissioners' report upon said section, on March 1st, 1877.

Defendants' Exhibit No. 25, being map of the 1st section of the Southern Pacific railroad as located and constructed, filed with the secretary of the interior with the commissioners' report upon said section, on May 8th, 1874.

Defendants' Exhibit No. 26, being map of the 2nd section of the Southern Pacific railroad as located and constructed, filed with the secretary of the interior with the commissioners' report upon said section, on November 8th, 1875.

Defendants' Exhibit No. 27, being map of the 3rd section of the Southern Pacific railroad as located and constructed, filed with the secretary of the interior with the commissioners' report upon said section, on July 10th, 1876.

Defendants' Exhibit No. 28, being maps of the 5th section of the Southern Pacific railroad as located and constructed, filed with the secretary of the interior with the commissioners' report upon said section, on January 17th, 1878.

Defendants' Exhibits Nos. 38, 39, 40, 41, and 42, being maps of permanent withdrawal, with 20-mile and 30-mile limit lines adjusted to the lines shown on the said maps Defendants' Exhibits Nos. 24, 25, 26, 27, and 28.

Defendants' Exhibit No. 77, being map of the State of California, issued by the commissioner of the general land office.

It is further mutually agreed by and between all the parties to this case consolidated No. 675, that in event it be found by counsel for any of the parties, prior to submission of the case in the United States Supreme Court, that any evidence introduced in the case which he deems material, has been omitted from the transcript of the record, then the clerk of this court shall forthwith, upon the request of counsel, transcribe and forward such omitted evidence to the proper court, as part of the transcript of record; and upon request of counsel for any of the parties, or direction of the Court, all or any of the documents set forth in subdivision IV hereof, shall be printed as part of the printed transcript of record, in the United States Circuit Court of Appeals, or United States Supreme Court, as the case may be.

Dated and signed on November 1st, 1899.

JOSEPH H. CALL,
Special Assistant U. S. Attorney.

WM. SINGER, Jr, and
W. H. H. HART,
Attorneys for the Defendants.

[Endorsed]: Con'd No. 675. U. S. Circuit Court, 9th Circuit, Southern District of California. United States vs. Southern Pacific Railroad Co. et al. Stipulation. Filed Nov. 7, 1899. Wm. M. Van Dyke, Clerk. Wm. Singer, Jr., rooms 61-2, Union Trust Building, *N. E. cor. 2nd and Mission Sts.*, San Francisco, Cal., Atty. for Def'ts.

At a stated term, to wit, the August Term, A. D. 1899, of the Circuit Court of the United States of America, of the Ninth Judicial Circuit, in and for the Southern District of California, held at the courtroom in the City of Los Angeles, on Monday, the eighteenth day of December, in the year of our Lord one thousand eight hundred and ninety-nine. Present: The Honorable ERSKINE M. ROSS, Circuit Judge.

Consolidated No. 675.

No. 675.

THE UNITED STATES OF AMERICA,

Complainants,

vs.

THE SOUTHERN PACIFIC RAILROAD COMPANY, D. O. MILLS and HOMER S. KING, Trustees, and THE CENTRAL TRUST COMPANY OF NEW YORK, THE SOUTHERN PACIFIC COMPANY OF KENTUCKY, THE COLORADO RIVER IRRIGATION COMPANY,

Defendants.

No. 587.

THE UNITED STATES OF AMERICA,

Complainants,

vs.

THE SOUTHERN PACIFIC RAILROAD COMPANY, D. O. MILLS and HOMER S. KING, Trustees, and THE CENTRAL TRUST COMPANY OF NEW YORK, THE SOUTHERN PACIFIC COMPANY OF KENTUCKY, THE COLORADO RIVER IRRIGATION COMPANY,

Defendants.

No. 662.

THE UNITED STATES OF AMERICA,

Complainants,

vs.

THE SOUTHERN PACIFIC RAILROAD COMPANY,

Defendant.

Order That Certain Original Documents be Sent Up with Transcript.

Pursuant to the stipulation signed by the attorneys for the respective parties, on file herein, it is ordered that the following original documents forming part of the evidence in this cause, being necessary to inspection by the United States Circuit Court of Appeals for the Ninth Circuit, and by the Supreme Court of the United States if appealed thereto, shall be sent up as original documents with the transcript of the record in accordance with subdivision 4 of rule 14 of the rules of the United States Circuit Court of Appeals for the Ninth Circuit, and subdivision 4 of rule 8 of the rules of the Supreme Court, to wit:

Plaintiffs' Exhibit No. 2, being map of general route of the Texas Pacific railroad, filed with the secretary of the interior on September 2nd, 1871.

Plaintiffs' Exhibits Nos. 4, 5, 6, 7, and 8, being certified copies of certain township plats.

Defendants' Exhibit No. 24, being map of the 4th section of the Southern Pacific railroad as located and constructed, filed with the secretary of the interior with the commissioners' report upon said section, on March 1st, 1877.

Defendants' Exhibit No. 25, being map of the 1st section of the Southern Pacific railroad as located and constructed, filed with the secretary of the interior with the commissioners' report upon said section, on May 8th, 1874.

Defendants' Exhibit No. 26, being map of the 2nd section of the Southern Pacific railroad as located and constructed, filed with the secretary of the interior with the commissioners' report upon said section, on November 8th, 1875.

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Defendants' Exhibit No. 28, being maps of the 5th section of the Southern Pacific railroad as located and constructed, filed with the secretary of the interior, with the commissioners' report upon said section, on January 17th, 1878.

Defendants' Exhibits Nos. 38, 39, 40, 41 and 42, being maps of permanent withdrawal, with 20-mile and 30-mile limit lines adjusted to the lines shown on the said maps, Defendants' Exhibits Nos. 24, 25, 26, 27, and 28.

Defendants' Exhibit No. 77, being map of the State of California, issued by the commissioner of the general landoffice.

The said original exhibits to be delivered to the clerk of the United States Circuit Court of Appeals for the Ninth Circuit, to be returned to the files of this cause in

this court upon the final determination of the appeal herein by the United States Circuit Court of Appeals or by the Supreme Court of the United States, if appealed thereto.

In the Circuit Court of the United States of America, of the Ninth Judicial Circuit, in and for the Southern District of California.

Consolidated No. 675.

No. 675.

THE UNITED STATES OF AMERICA,

Complainants,

vs.

THE SOUTHERN PACIFIC RAILROAD COMPANY, D. O. MILLS and HOMER S. KING, Trustees, and THE CENTRAL TRUST COMPANY OF NEW YORK, THE SOUTHERN PACIFIC COMPANY OF KENTUCKY, THE COLORADO RIVER IRRIGATION COMPANY,

Defendants.

No. 587.

THE UNITED STATES OF AMERICA,

Complainants,

vs.

THE SOUTHERN PACIFIC RAILROAD COMPANY, D. O. MILLS and HOMER S. KING, Trustees, and THE CENTRAL TRUST COMPANY OF NEW YORK, THE SOUTHERN PACIFIC COMPANY OF KENTUCKY, THE COLORADO RIVER IRRIGATION COMPANY,

Defendants.

No. 662.

THE UNITED STATES OF AMERICA,

Complainants,

vs.

THE SOUTHERN PACIFIC RAILROAD COMPANY,

Defendant.

Clerk's Certificate to Transcript.

I, Wm. M. Van Dyke, clerk of the Circuit Court of the United States of America, of the Ninth Judicial Circuit, in and for the Southern District of California, do hereby certify the foregoing two thousand one hundred and fifty-three written and printed pages, numbered from 1 to 2,153, inclusive, and comprised in eight (8) volumes, numbered respectively volumes 1, 2, 3, 4, 5, 6, 7, and 8, including diagrams, maps and plats (excepting therefrom original exhibits, viz: Plaintiffs' Exhibit No. 2, being map of general route of the Texas Pacific railroad, filed with the secretary of the interior on September 2nd, 1871; Plaintiffs' Exhibits Nos. 4, 5, 6, 7, and 8, being certified copies of certain township plats; Defendants' Exhibit No. 24, being map of the 4th section of the Southern Pacific railroad as located and constructed, filed with the secretary of the interior with the commissioners' report upon said section, on March 1st, 1877; Defendants' Exhibit No. 25, being map of the 1st section of the Southern Pacific railroad as located and constructed, filed with the secretary of the interior with the commissioners' report upon said section, on May 8th, 1874; Defendants' Exhibit

No. 26, being map of the 2nd section of the Southern Pacific railroad as located and constructed, filed with the secretary of the interior with the commissioners' report upon said section, on November 8th, 1875; Defendants' Exhibit No. 27, being map of the 3rd section of the Southern Pacific railroad as located and constructed, filed with the secretary of the interior with the commissioners' report upon said section, on July 10th, 1876; Defendants' Exhibit No. 28, being map of the 5th section of the Southern Pacific railroad as located and constructed, filed with the secretary of the interior with the commisioners' report upon said section, on Jannary 17th, 1878; Defendants' Exhibits Nos. 38, 39, 40, 41, and 42, being maps of permanent withdrawal with 20-mile and 30-mile limit lines adjusted to the lines shown on the said maps Defendants' Exhibits Nos. 24, 25, 26, 27, and 28; Defendants' Exhibit No. 77, being map of the State of California, issued by the commissioner of the general landoffice, which said original exhibits are by order of Court transmitted herewith and made a part hereof; and also excepting certain documents, comprising certain of the pleadings filed, and portions of the evidence introduced, which are omitted from the transcript pursuant to the stipulation of the parties hereinbefore set forth), to be a full, true, and correct copy of the record, pleadings, papers, opinions of the Court, assignment of errors, and of all proceedings in the above and therein entitled cause, and that the same together constitute the transcript of the record on appeal to the United States Circuit Court of Appeals for the Ninth Cir-

cuit, in said cause, under and pursuant to said stipulation.

I do further certify that the cost of the foregoing record is $1,663.20, the amount whereof is to be paid me by the Southern Pacific Railroad Company, one of the appellants in said cause.

In testimony whereof, I have hereunto set my hand and affixed the seal of the said Circuit Court of the United States of America, of the Ninth Judicial Circuit, in and for the Southern District of California, this thirtieth day of December, in the year of our Lord one thousand eight hundred and ninety-nine, and of the independence of the United States the one hundred and twenty-fourth.

[Seal] WM. M. VAN DYKE,

Clerk of the Circuit Court of the United States of America, of the Ninth Judicial Circuit, in and for the Southern District of California.

[Ten Cent U. S. Int. Rev. Stamp Canceled.]

[Endorsed]: No. 584. In the United States Circuit Court of Appeals for the Ninth Circuit. The Southern Pacific Railroad Company et al., Appellants, vs. The United States of America, Appellees. Transcript on Appeal. Appeal from the Circuit Court of the United States for the Southern District of California.

Filed January 15, 1900.

F. D. MONCKTON,

Clerk.

2440

PROCEEDINGS

IN THE

UNITED STATES CIRCUIT COURT OF APPEALS

FOR THE NINTH CIRCUIT.

In the United States Circuit Court of Appeals, for the Ninth Circuit.

SOUTHERN PACIFIC RAILROAD COMPANY et al.,
Appellants,
vs.
THE UNITED STATES OF AMERICA,
Appellees.
No. 584.

THE UNITED STATES OF AMERICA,
Appellants,
vs.
SOUTHERN PACIFIC RAILROAD COMPANY et al.,
Appellees.
No. 588.

Opinion (U. S. C. C. A).

Appeal from the Circuit Court of the United States for the Southern District of California.

JOSEPH H. CALL, for the United States.

WM. SINGER, Jr., for Southern Pacific Railroad Company.

WM. F. HERRIN, of Counsel.

Before GILBERT and MORROW, Circuit Judges, and HAWLEY, District Judge.

HAWLEY, District Judge, delivered the opinion of the Court.—The general history, character, and nature of these suits is fully stated in the opinion of the Circuit Court in United States vs. Southern Pacific Company, 94 Fed. 427, to which reference is here made. It appears therefrom that three separate independent suits were instituted by the United States against the Southern Pacific Railroad Company, for the purpose of determining the title to certain odd-numbered sections of land within the twenty and thirty mile limits of the grant made by the United States to the Southern Pacific Railroad Company by act of Congress of March 3, 1871, which lands are also within twenty miles of the general route of the Texas Pacific Railroad Company, as indicated by its map thereof filed in the office of the secretary of the interior or within thirty miles of the alleged definite location of the Texas Pacific Railroad Company from Yuma on the Colorado river, by way of San Gorgonio Pass to San Diego, California, to cancel such patents as had theretofore been issued by the Government of the United States to the Southern Pacific Railroad Company under the grant of March 3, 1871, and to quiet the complainant's title to all of the lands referred to. Pending the preliminary stages of the proceedings in these cases, the Court, upon the filing of a stipulation by the respective counsel, made an order consolidating the suits. After the consolidation the Government, on May 26, 1896, filed an amended and supplemental bill of complaint in which issue was thereafter duly joined, and the suit tried. Prior to the submission of the cause in the Circuit Court, the Gov-

ernment dismissed the suit in so far as it concerned all of the lands mentioned for which patents had been issued by it, except about five thousand acres, which the Southern Pacific Railroad Company had contracted to sell to the Colorado River Irrigation Company, a party defendant herein. The suit as submitted to the Circuit Court involved those five thousand acres, and all of the unpatented odd-numbered sections of land embraced within the primary and indemnity limits of the Southern Pacific Company's grant of March 3, 1871, that are also within twenty miles of the general route of the Texas Pacific Company, as indicated by its maps thereof, filed in the general land office, or within thirty miles of the asserted definite location of the Texas Pacific Railroad from Yuma, by way of San Gorgonio Pass to San Diego, California. The Circuit Court, upon the hearing of the case, held that the United States were entitled to a decree for the lands within the twenty mile limits of the map of general route, filed in 1871 by the Texas Pacific Railroad Company, which were reserved by executive orders in October, 1871, which lands are unpatented. As to the remainder of the lands described in the bill, including a quarter section claimed by one Crawford, as a homestead, the Court adjudged that the Government take nothing, and a decree to that effect was duly entered.

From this decree the Southern Pacific Railroad Company, and the other defendants, appealed and assigned as error that the Court erred in deciding that the United States are the owners by title in fee simple absolute,

or the owners in anywise of the lands or any part thereof, described in the first subdivision of the decree. From that part of the decree against the United States, as to the lands embraced by the bill, other than those reserved in the act of 1871 for the Texas Pacific Railroad Company, the United States took a cross-appeal, and made the following assignment of errors:

1. "The Court erred in refusing to adjudge that the United States was the owner by title absolute and in fee of the lands described in the bill situated outside of the twenty mile limits of the line of route of the Texas Pacific Railway Company, shown by the map filed by said company on October 15, 1871.

2. It being the intention of Congress, by the act of March 3, 1871, to exclude and except from the grant to the Southern Pacific Railroad Company, made by the act of March 3, 1871, all of the lands to which the Texas Pacific Railway Company had a present or prospective right, to wit, the lands within forty miles of the line of route of said Texas Pacific Railway Company, as definitely fixed, the Court erred in adjudging that the United States was not entitled to a decree for the lands within forty miles of the line of route surveyed and fixed upon for construction by said company from Fort Yuma on the Colorado, via San Gorgonio Pass, to the bay of San Diego, as more fully described in the annual report of said company to the secretary of the interior for the year ending June 30, 1874, and erred in refusing to annul all patents issued to said Southern Pacific Railroad Company for such lands.

3. It being the intention of Congress to exclude and except from the Southern Pacific grant of March 3, 1871, all the lands designated by odd-numbered sections within the forty-mile limits of the line of route of the Texas Pacific Company between the Colorado river and the Pacific Ocean, the Court erred in refusing to grant to the United States a decree quieting its title and annulling patents issued to all or any of the lands within forty miles of the line of route of the Texas Pacific Railway Company between the Colorado river and the Pacific Ocean, as designated and fixed in section 1 of said act of March 3, 1871, to wit, from 'a point on the Rio Colorado at or near the southeastern boundary of the State of California; thence by the most direct and eligible route to San Diego, California, to Ship's Channel in the bay of San Diego, in the State of California, pursuing in the location thereof as near as may be the thirty-second parallel of north latitude.'

4. The Court erred in adjudging defendant Colorado River Irrigation Company to be a bona fide purchaser from the Southern Pacific Railway Company for any of the lands described in the bill for which this suit is brought.

5. As to the northwest quarter of section 17, township 7 south, range 3 east, as to which tract the Court dismissed the bill it appearing that said land is outside of the granted limits of the grant to the Southern Pacific Railroad Company, and that said tract was settled upon as a homestead on August 1, 1887, by one Joseph Crawford, he being duly qualified, and he having a valid, sub-

sisting, and unexpired settlement right upon said land under the homestead law, upon October 3, 1887, when said Southern Pacific Railroad Company selected said land as indemnity, the Court erred in refusing to grant the United States a decree annulling the patent and certification of said land to said company."

Both parties claim grants of land under the provisions of the act entitled "An act to incorporate the Texas Pacific Railroad Company, and to aid in the construction of its road, and for other purposes." (16 Stat. 573.) Section 1 of this act provides for the incorporation of the Texas Pacific Railroad Company, and authorized it to lay out, "locate, construct, furnish, maintain and enjoy a continuous railroad and telegraph line, with the appurtenances, from a point at or near Marshall, county of Harrison, State of Texas; thence by the most direct and eligible route, to be determined by said company, near the thirty-second parallel of north latitude, to a point at or near El Paso; thence by the most direct and eligible route, to be selected by said company, through New Mexico and Arizona, to a point on the Rio Colorado, at or near the southeastern boundary of the State of California; thence by the most direct and eligible route to San Diego, California, to Ship's Channel, in the bay of San Diego, in the State of California, pursuing in the location thereof, as near as may be, the thirty-second parallel of north latitude, and is hereby vested with all the powers, privileges, and immunities necessary to carry into effect the purposes of this act."

Section 9 provides as follows: "That for the purpose of

aiding in the construction of the railroad and telegraph line herein provided for, there is hereby granted to the said Texas Pacific Railroad Company, its successors and assigns, every alternate section of public land, not mineral, designated by odd numbers, to the amount of twenty alternate sections per mile, on each side of said railroad line, as such line may be adopted by said company, through the territories of the United States, and ten alternate sections of land per mile on each side of said railroad in California, where the same shall not have been sold, reserved, or otherwise disposed of by the United States, and to which a pre-emption or homestead claim may not have attached at the time the line of said road is definitely fixed. In case any of said lands shall have been sold, reserved, occupied, or pre-empted, or otherwise disposed of, other lands shall be selected in lieu thereof by said company, under the direction of the secretary of the interior, in alternate sections, and designated by odd numbers, not more than ten miles beyond the limits of said alternate sections first above named, and not including the reserved numbers."

Section 12 provides as follows: "That whenever the said company shall complete the first and each succeeding section of twenty consecutive miles of said railroad and put it in running order as a first-class road in all its appointments, it shall be the duty of the secretary of the interior to cause patents to be issued conveying to said company the number of sections of land opposite to and coterminous with said completed road to which it shall be entitled for each section so completed. Said company, within two years after the passage of this act, shall

designate the general route of its said road, as near as may be, and shall file a map of the same in the department of the interior; and when the map is so filed, the secretary of the interior, immediately thereafter, shall cause the lands within forty miles on each side of said designated route within the territories, and twenty miles within the State of California, to be withdrawn from preemption, private entry, and sale."

Section 13 of the act provides "that the president of the company shall annually, by the first day of July, make a report and file it with the secretary of the interior, which report shall be under oath, exhibiting the financial situation of the company, the amount of money received and expended, and the number of miles of road constructed each year. * * * A description of the lines of road surveyed and fixed upon for construction."

The grant to the Southern Pacific Railroad Company is made in section 23 of this act, which reads as follows: "That, for the purpose of connecting the Texas Pacific railroad with the city of San Francisco, the Southern Pacific Railroad Company of California is hereby authorized (subject to the laws of California) to construct a line of railroad from a point at or near Tehachapi Pass, by way of Los Angeles, to the Texas Pacific railroad at or near the Colorado river, with the same rights, grants, and privileges, and subject to the same limitations, restrictions and conditions as were granted to said Southern Pacific Railroad Company of California, by the act of July twenty-seven, eighteen hundred and sixty-six; provided, however, that this section shall in no way af-

fect or impair the rights, present or prospective, of the Atlantic and Pacific Railroad Company or any other railroad company."

The record shows that the Texas Pacific Railroad Company, on August 15, 1871, filed a map of its general route from a point in Texas to the bay of San Diego, showing the line of route, designated as the "direct line." That the Southern Pacific Railroad Company on April 3, 1871, filed a map of its general route from Tehachapi Pass via Los Angeles to the Colorado river at a point near Yuma.

1. Had the Texas Pacific Railroad Company, or any other railroad company, acquired any present or prospective right, to any of the lands embraced in this suit, at the time the grant was made by the Government to the Southern Pacific Railroad Company, March 3, 1871? The answer to this question will dispose of the appeal taken herein by the Southern Pacific Company, and will be found in the opinion of the Court in United States vs. Colton Marble and Lime Company, 146 U. S. 615. It is true that in that case the Court confined itself to the conflicting claims of the Southern Pacific and the Atlantic and Pacific Company; but by reference to the provisos in the grant to the Southern Pacific, it will be seen that it also includes "present or prospective" rights of "any other railroad company" and it therefore necessarily follows that the views expressed by the Supreme Court in that case apply with equal force to the conflicting claims, if any, between the Southern Pacific and the Texas Pacific; because whatever rights the Texas Pa-

cific Company ever acquired to any of the lands in question continued to exist until the act of forfeiture passed by Congress February 28, 1885, and as long before that time the Southern Pacific Company had built the road it was authorized to construct, and filed in the general land office maps showing its definite location, it necessarily follows, that if at the latter date the lands in suit, or any of them, were for any reason reserved, or were lands the Texas Pacific Company had acquired a present or prospective right, such lands did not pass to the Southern Pacific Company under its grant. For as to such lands the Texas Pacific Company certainly had a "prospective," if it did not have a "present right." Inasmuch as the grants to the Southern Pacific and Texas Pacific Railroad Companies were given by the same act, and of the same date, the ordinary and usual rule would be to give each of said companies one-half of such lands as were within both grants. But the case under consideration is taken out of the ordinary rule, by the proviso annexed to the grant to the Southern Pacific Company.

In United States vs. Colton Marble and Lime Company (supra), the Court speaking of a similar proviso said: "What is the significance of this proviso? * * * It cannot be supposed that this proviso was meaningless, and that Congress intended nothing by it. Carefully inserted, in a way to distinguish this grant from ordinary, later and conflicting grants, it must be held that Congress meant by it to impose limitations and restrictions different from those generally imposed in such cases, and it in sub-

stancedeclared that the Southern Pacific Company should not in any event take lands to which any other company had at the time a present or prospective right. * * * What were the prospective rights of the Atlantic and Pacific Company? Of course, it could not be known at the time of the passage of the later act exactly where the lines of the two companies would be located, and where the point of crossing would be. Neither could it then be known that there would be any deficiency in the granted lands at the point of crossing, or that, if such deficiency existed, it would require all the indemnity lands to make good the loss. It might well be assumed that very likely the Atlantic and Pacific Company would be called upon to select from the indemnity lands a portion sufficient to make good the deficiency, in the granted limits. That right of selection was a prospective right, and if it was to be fully exercised, no adverse title could be created to any lands within the indemnity limits. Suppose, for instance, it should turn out that only half of the indemnity lands were necessary to make good the deficiency, and that one-half of such lands were well watered and valuable, while the remainder were arid and comparatively valueless, obviously the right of selection would be seriously impaired if it were limited to only the arid and valueless tracts. In fact, every withdrawal of lands from the aggregate of those from which selection could be made would more or less impair the value of the right of selection. The only way in which force can be given to this proviso is to hold that the indemnity lands of the Atlantic and Pacific were exempted

from the grant to the Southern Pacific, for, if not exempted, the former company's prospective right of selection would be to that extent impaired."

This disposes of the appeal taken by the Southern Pacific Company, which only covers a small portion of the land in controversy.

The decree of the Circuit Court in relation to these lands is correct and will be affirmed.

2. We will now proceed to consider the questions raised in the appeal taken by the United States (which covers a much greater part of the lands involved herein), and relates to the lands that are embraced within the primary and indemnity limits of what appellants contend was the definite location of the route of the Texas Pacific Railroad Company, extending from Yuma by way of San Gorgonio Pass to San Diego.

On the other hand, it is insisted by the Southern Pacific Company that the Texas Pacific Company never had the right to construct, build, or locate any railroad from Yuma to San Diego by way of San Gorgonio Pass, and that as a matter of fact it never did definitely locate any such road. Was the line of the Texas Pacific Railroad Company ever definitely located and fixed, or authorized to be built by said company under the acts of Congress? Unless both of these propositions are affirmatively established by the evidence, it follows that the decree of the Circuit Court in favor of the Southern Pacific Company as to these lands must be affirmed. The questions involved are important and demand a careful and searching review of the evidence, as well as of the general

principles of law applicable thereto. In the consideration of these questions, it must be remembered that it is conceded by both parties that the Southern Pacific Company fully performed the conditions of the granting act. The record clearly shows that it fully completed its railroad along the proposed route, and earned the lands granted by the act.

It is admitted that the lands involved herein are all within the limits of said grant, unless excepted therefrom by the Texas Pacific grant. It is also admitted that the Texas Pacific Company never constructed or built the road authorized by Congress. The contention of the Government is that the lands in question, which were granted to the Texas Pacific Railroad Company by the act of March 3, 1871 (16 Stat. 573), were restored to the Government by the provisions of the act of February 28, 1885 (23 Stat. 337), forfeiting the grant for failure to construct a railroad in aid of which the grant was made, and that no right or title attached to said lands under the land grant of the Southern Pacific Company.

The contention of the appellee is that the Texas Pacific Company was not authorized to construct any railroad which could, in any manner, vest in it any right or interest in the lands in controversy (except a small quantity mentioned in the opinion of the lower Court), and as a matter of fact, established by the evidence, it never did definitely locate and fix any line of railroad, or acquire any right whatever to any lands in California; and that its grant at no time affected the status of any lands in this State.

By examining the first section of the act creating the Texas Pacific Railroad, it will be observed that it is specifically authorized to construct a continuous railroad from and to certain designated points. It is divided into three sections, the requirements as to each section of the line of road are to some extent distinct from the others. From Marshall to El Paso the requirement is that it shall be "by the most direct and eligible route, to be determined by said company, near the thirty-second parallel of north latitude." From El Paso to Yuma it is to be "by the most direct and eligible route to be selected by said company." From Yuma to San Diego, it must be "by the most direct and eligible route * * * pursuing in the location thereof, as near as may be, the thirty-second parallel of north latitude."

With reference to the question whether the line of the Texas Pacific Railroad was ever definitely fixed from Ft. Yuma to San Diego through the San Gorgonio Pass, it appears that in the year 1872 and 1873, the Texas Pacific Company caused numerous surveys, of the different lines between the Colorado river and San Diego to be made, by its chief engineer, General G. M. Dodge, and division engineers J. A. Evans and Joseph U. Crawford. The general results of these various surveys are embodied in a report made by the chief engineer to the president of the Texas Pacific Railroad Company on March 12, 1873, for the purpose of imparting sufficient information to enable the board of directors of said corporation "to determine upon the general route from San Diego east."

The lines examined by the engineers are briefly stated in the report as follows: "The lines examined are as follows: The direct line from San Diego to Ft. Yuma, known as the 'Otay Valley Line,' 203 11-100 miles long. The San Gorgonio Pass lines, numbered 1 to 4, marked 'Main Line,' and 'A, B, C, D,' on maps. No. 1. Main line, 313 miles long. No. 2. The coast line, via Temecula creek to the main line; thence by main line to the pass—308 73-100 miles. No. 3. The coast line to Temecula; thence the main line to La Laguna; thence up the San Jacinto river and San Bernardino, 302 miles. No. 4. The coast line; thence Temecula creek; thence line D direct to San Gorgonio Pass—270 miles."

This report is copied at greater length in the opinion of the Circuit Court, in which the prominent features of each line are fully set forth, and to which reference is here made.

The report made by General Dodge was submitted by the president of the company to the board of directors and on April 4, 1873, the board adopted the following resolution: "On motion it was resolved that the line by San Gorgonio Pass known as 'No. 4,' be, and the same is hereby, adopted as the route from San Diego, with such modifications as in the judgment of the president may be to the best interests of the company."

We do not understand the Government to claim that this resolution definitely fixed the line by San Gorgonio Pass. Of course, it could not do so. At most, it can only be considered as expressing a willingness on the part of the directors to adopt that line provided the

president of the company should, in his judgment, deem it to be to the best interests of the company so to do. It is apparent that no railroad could be definitely located by a resolution made subject to such modifications or provisos. But it is earnestly argued that the line of road was definitely fixed and located by the report of General Dodge as chief engineer made in May, 1874, and it is claimed that this report gives an accurate description of the line. It reads as follows: "Beginning at Fort Yuma, from there the line runs in a northwesterly direction, passing to the north of the sand hill and across the Salt Lake district of the Colorado desert of California, over which our line for 45 miles is below sea level, the lowest point being 290 feet below tide water. In crossing this, the line passes on the north margin of the Salt Lake of the Colorado desert; leaving the mud volcanoes about five miles to the south, and the Dos Palmos stage station about the same distance to the north we reach the Cabazon valley 113 miles from Ft. Yuma; thence on nearly the same course 50 miles, to the summit of San Gorgonio Pass, running 1¼ miles south of White Water stage station and one mile south of Devontine's ranch, reaching the summit 2½ miles south of Edgar's ranch. This pass is 2,621 feet above tide water, and its small elevation must be considered remarkable, as it lies between the San Bernardino and San Jacinto mountains, the highest peaks of the range. Leaving San Gorgonio Pass, our course is southwest, passing down one of the tributaries of the San Jacinto which is known as the Potrero (or Pocket) of the San Jacinto, to the

San Jacinto Plains and Temecula Plains. These plains lie between the main range and the Santa Ana range, and down the Temucula Plains to the head of the Temecula canyon, and down the canyon where the Temecula breaks through the Santa Ana range, 10 miles to the open valley, striking the coast near the (13) San Coronado ranges, about 40 miles north of San Diego; then south and down the coast on the western slope of the Soledad mountains, crossing the Soledad, San Luis Rey, San Dieguito, the ravine of La Jolla, skirting False bay; then to the shore of San Diego bay, and along the shore of the bay to the depot grounds of the Texas Pacific Railway below the Pacific Steamship Company's wharf. Distance from the Pima villages on the Gila river, 444.4 miles."

In this report General Dodge says that, "since July, 1872, the surveys have been extended from the Red river, in Texas, to the Pacific Ocean, in the general direction of the 32 parallel of latitude, exploring a country 200 miles in width, developing its resources, bringing to light its hidden treasures, and fully demonstrating its capability for building and sustaining a railroad to the Pacific Ocean. The country has been systematically developed. Explorations been have pushed to success, and one after another of the engineering obstacles supposed to exist to the building of the Southern Pacific Railway have been met and overcome; the route of the road has been definitely fixed, and unquestionably is the best to be had across the continent in the zone which has been explored."

We are unable to agree with the learned counsel for the Government that this report definitely locates the line of the road. The language is too general and indefinite for any such purpose. The law certainly requires some further action on the part of the company to show that this route had been so definitely fixed as to put it beyond the power of the company to change it. No force or effect whatever can be given to the statement of the chief engineer that "the route of the road has been definitely fixed." The statute nowhere declares that the opinion of such an officer shall be sufficient to show that the railroad line has been "definitely fixed."

Some stress is also made upon the fact that in the annual report of the Texas Pacific Railroad to the United States for the fiscal year ending June 30, 1876, it is said: "A full description of the line of road surveyed and fixed upon for construction was given in the report made to the department of the interior, July 1, 1874." This report (like several others contained in the record) is required to be made by section 13 of the act of 1871. The provisions of which, it will be observed, are principally concerning matters of a financial nature. There is nothing contained therein which could, by any consistent course of reasoning, be claimed to excuse the railroad company from making a definite location of the road. If the road had not been definitely located, it is difficult to see how any statement in such report could so "fix" it. The land grant must be controlled by the facts, not by the financial reports filed by the company

under and in compliance with the provisions of section 13. It could not, we apprehend, be seriously argued, that the mere filing of such reports would earn, or the failure to file them forfeit, the land grants contained in the other section of the act.

There are certain maps attached to some of the reports made to the secretary of the interior of an uncertain and indefinite nature which are, in our opinion, wholly insufficient to fix the definite location of the railroad on any of the surveyed lines, or entitle them to be designated as maps of the general route. But they are, nevertheless, claimed by counsel for appellant to be, of themselves, sufficient to protect the rights of the Texas Pacific. None of the maps are sufficient of themselves to withdraw the lands, so as to prevent the Southern Pacific Company from earning the lands granted to it at any time prior to a date of the filing of a map of definite location by the Texas Pacific Company. A map "of a general route" is not of itself sufficient for that purpose.

In United States vs. Oregon and California Railroad Company, 176 U. S. 28, 43, 46, the Court, in discussing matters applicable as well to this, as to that, case, among other things said: "If, therefore, the Perham map of 1865 were conceded for the purposes of the present discussion to have been sufficient as a map of 'general route'—and nothing more can possibly be claimed for it—these lands could not be regarded as having been brought by that map (even if it had been accepted) within the grant to the Northern Pacific Railroad Com-

pany, and thereby have become so segregated from the public domain as to preclude the possibility of their being earned by other railroad companies under statutes enacted by Congress after the filing of that map and before any definite location by the company of its line."

The Court, after calling attention to some general expressions used by Mr. Justice Field in Buttz vs. Northern Pacific Railroad Company, 119 U. S. 55, 71, 72, said: "This language was too broad if it is construed to express the thought that public lands, when within the exterior lines of a 'general route,' are 'appropriated' from the time the map of such route is filed, so as to prevent them from being granted by Congress to and from being earned by another railroad corporation prior to the filing of a map of definite location by the company designating such general route. In Northern Pacific Railroad v. Sanders, 166 U. S. 620, 634, 635, 636, this Court, referring to the act of July 2, 1864, said: 'The company acquired, by fixing its general route, only an inchoate right to the odd-numbered sections granted by Congress, and no right attached to any specific section until the road was definitely located and the map thereof filed and accepted. Until such definite location it was competent for Congress to dispose of the public lands on the general route of the road as it saw proper. * * * We take it, then, to be indisputable that even if the Perham map of 1865 were regarded as a sufficient map of the 'general route' of the Northern Pacific Railroad, and not, to use the language of Judge Ross in this case, a mere sketch or diagram unauthenticated by any engineer or officer

charged with the duty of designating such a route, nothing stood in the way of Congress granting to another railroad company any lands within the exterior lines of that route, by a statute passed after such map was filed in the land department, and before a definite location of the Northern Pacific Railroad."

There are divers other facts and circumstances contained in the lengthy record in this case which are referred to in the brief filed by the special United States attorney, which are, in connection with the reports of General Dodge, claimed to be sufficient to establish the proposition that the line of said road had been "definitely fixed" within the meaning of those words as used in section 9 of the act of March 3, 1871.

We have carefully examined the record upon all of the points relied upon by the learned counsel, and have arrived at the conclusion that there is no sufficient evidence to support this contention. The subsequent reports and testimony of the various officers, engineers, and employees of the railroad company, in our opinion, clearly show that the line of the railroad was not definitely located in 1874, or at any time prior thereto. True it is that it seems to have been "definitely fixed" in the mind of the chief engineer; but it had not been "definitely fixed" on the face of the earth; nor in any other manner sufficient to comply with the provisions of the statute. No line of a railroad can be considered as definitely fixed unless it has, by some action which is binding upon the company and the Government, ceased to be the subject of change at the mere volition of the railroad company. In so far as the object and purposes

of the grant of lands mentioned in the statute is concerned, it must affirmatively appear that the line of the road has been so definitely located and fixed that it cannot thereafter be the subject of any change in the route so as to affect the rights of any other parties. It is true that the line in question was surveyed, in connection with several other routes; but the definite location of the road on one of the surveyed lines was an act to be performed by the railroad company. It was to select for itself the definite line of location upon which its road was to be built, and under the general principles of the law upon this subject it is required to report its action to the Government by filing a map of its definite location in the usual and proper manner.

Van Wyck vs. Knevals, 106 U. S. 360, 366;

Sioux City Land Co. vs. Griffey, 143 U. S. 32, 38, and authorities there cited;

St. Paul M. & M. Ry. Co. vs. Sage, 71 Fed. 40, 48-50.

In Tarpey vs. Madsen 178 U. S. 215, 228, the Court, in discussing the rights of the railroad company and individual entrymen, announced certain general principles that are directly applicable here. The Court said: "Recapitulating, we are of opinion that a proper interpretation of the acts of Congress making railroad grants like the one in question requires that the relative rights of the company and an individual entryman, must be determined, not by the act of the company in itself fixing definitely the line of its road, or by the mere occupancy of the individual, but by record evidence, on the one part the filing of the map in the office of the secretary of the

interior, and, on the other, the declaration or entry in the local land office. In this way matters resting on oral testimony are eliminated, a certainty and definiteness is given to the rights of each, the grant becomes fixed and definite."

But even if it could be held, as contended for by appellant's counsel, that it was not required to file such map because not specifically provided for by the language of the statute, then it certainly must make other sufficient proofs of the time and manner in which the line of location was "definitely fixed" in order to bind all parties claiming any rights to said lands.

The evidence in the record, taken in its entirety upon this point, in our opinion, clearly shows that the line of the Texas Pacific Railroad from Fort Worth by way of San Gorgonio Pass to San Diego, was never, in any manner known to the law, definitely fixed.

The testimony of J. U. Crowford is to the effect that in 1877 he met General Dodge, John C. Brown, then vice-president of the Texas Pacific Company, and Mr. Frank Bond, who was also an official of said company, in Washington, D. C.; that at that time the Texas Pacific Company was seeking aid from the Government "to construct the railroad upon the thirty-second parallel"; that in the year 1877 he got a telegram from Mr. Bond to go to San Diego and try to reduce the quantities upon the direct line surveyed by Reno; that the Southern Pacific Company occupied the San Gorgonio Pass in 1877; that he was representing San Diego at that time; that the people of that city "thought they would be cut off, and

we were representing them; you notice the report of the committee states that San Diego had more merits in its argument than anywhere else. You will find we made a strong fight to connect San Diego by the direct line. It was a fight for aid and a fight for life for San Diego." It further appears from the record that in 1878 Mr. Brown, the vice-president, in addressing the committee on Texas Pacific Railroad, among other things, said: "I wish to state, in reply to Mr. Huntington, when he says that Colonel Scott, two years ago, declared that the road could not be constructed over the direct route from Yuma to San Diego, that we have since that time had skillful and intelligent engineers to go over that country, and they have explored canyons and passes not before examined by our engineers and revised the former line; and they report that the direct line is entirely practicable, and that it can be built at much less cost than similar work done on the Southern Pacific or Central Pacific roads. * * * There are thirty miles of this route which will be very expensive; some of it may cost $250,000 to $300,000 per mile; but the average will not exceed $36,000 per mile."

Does not this testimony clearly show that no definite location of the road had been made? Why seek aid or make new surveys of the direct line on the thirty-second parallel, if three years prior to that time the road had been definitely fixed on the other route?

It follows from the conclusions we have reached upon this point that the lands granted to the Southern Pacific Company by the act of 1871 have never been excluded

therefrom by reason of any definite location of the Texas Pacific Railroad.

3. The other ground relied upon by appellees is equally as well established, and leads to the same result.

Was the Texas Pacific Railroad Company ever authorized to build the line of road we have been discussing? We are of opinion it was not. It is admitted that the Otay line, referred to in the report of the chief engineer on March 12, 1873, is a direct line from Yuma to San Diego. It substantially conforms to the line designated by the company on the map of the general route which was filed with the secretary of the interior to which we have heretofore referred. It is also a line which substantially conforms with the general description of the route as mentioned in section one of the act of March 3, 1871, upon which the Texas Pacific Company was authorized to construct and build its road. It follows the description given in the act "pursuing in the location thereof as near as may be the thirty-second parallel of north latitude," while the line in controversy starting from Yuma runs about 163 miles in a northwesterly direction to the summit of San Gorgonio Pass near the thirty-fourth parallel of north latitude; thence runs southwesterly to the Pacific Coast; thence south 40 miles along the coast to San Diego. Instead of pursuing "as near as may be the thirty-second parallel of north latitude," the line for a considerable distance pursues "as near as may be" the thirty-fourth parallel of north latitude. Moreover, the act, in section 23, granting lands to the Southern Pacific Railroad Company, "for the purpose of connecting the

Texas Pacific Railroad with the city of San Francisco" authorized the Southern Pacific Company to construct a line of railroad "from a point at or near Tehachapi Pass by way of Los Angeles to the Texas Pacific Railroad, at or near the Colorado river." It was never intended by Congress, in the passage of the act of March 3, 1871, that the respective railroads should run parallel with each other. They were to meet at a point near the Colorado river; yet the line of the Texas Pacific from Yuma to San Gorgonio Pass practically parallels the Southern Pacific road. We are of opinion that the Texas Pacific Company had no authority under the act of March 3, 1871, or supplemental act of May 2, 1872 (17 Stat. 59), to build any road on the line in question. The act of 1871 in its description of the general route is similar to the act of July 2, 1864 (13 Stat. 365), granting lands to the Northern Pacific Railroad Company.

In United States vs. Northern Pacific Railroad Co., 152 U. S. 284, 292, the Court, in considering the question whether that act contained a grant of lands in aid of the construction by the Northern Pacific Railroad Company of a railroad from Portland to Puget Sound, said: "Although that act allowed the company to adopt the most eligible route within the territory of the United States north of the forty-fifth degree of latitude, it is clear that Congress contemplated the construction of a main trunk line between Lake Superior and Puget Sound, which would not touch any point 'at or near Portland,' and the western end of which would be east and northeast of a direct line between Portland and Puget Sound,

and, in addition, a branch line leaving the main trunk line, at some suitable place, not more than three hundred miles from its western terminus, and extending 'via the valley of the Columbia river to a point at or near Portland.' If the main line, as originally indicated by the act of 1864, had been established on the route between Portland and Puget Sound, the branch line could not have left the main line at some point not more than three hundred miles from its western terminus, and extended via the valley of Columbia river to a point at or near Portland. The authority given to the company to adopt the most eligible route did not authorize it, by a map of general route, to cover an unlimited extent of country, north of the forty-fifth degree of latitude. On the contrary, as is said in St. Paul & Pacific Railroad vs. Northern Pacific Railroad, 139 U. S. 1, 13, 'when the termini of a railroad are mentioned, for whose construction a grant is made, the extent of which is dependent upon the distance between those points, the road should be constructed upon the most direct and practicable line. No necessary deviation from such line would be deemed within the contemplation of the grantor, and would be rejected as not in accordance with the grant.' It may be that the indefiniteness of the map of general route presented by the Northern Pacific Railroad Company in 1865 constituted the reason why that map was not accepted by the interior department. Besides, it is not found as a fact in this case that the most eligible railroad route for the main line, between Lake Superior and Puget Sound, looking at the purpose of Congress in

making the grant of 1864, was down the Columbia river and via some point at or near Portland. It is clear that the purpose of Congress, by the act of 1864, was not to connect Portland with Puget Sound by a road established upon the most direct or eligible route between those places; but so far as Portland and its vicinity were concerned, to connect them with the east by a branch road through the valley of the Columbia river, that would strike the main trunk line connecting Puget Sound and Lake Superior. There was no purpose by that act to make a grant of lands for a road to be located and constructed from a point 'at or near Portland' to Puget Sound."

4. The other points raised herein have passed beyond the pale of discussion. The lands patented to the Southern Pacific Company and by it contracted to be sold and conveyed to the defendant Colorado River Irrigation Company are fully protected by the confirmatory act of March 2, 1896 (29 Stat. 42), which supplements that of March 3, 1887 (24 Stat. 556), as was held in the

United States vs. Southern Pacific Co., 86 Fed. 962;
Id., 88 Fed. 832;
Id., 98 Fed. 27;
Id., 98 Fed. 45.

5. That the defendants, trustees of the Southern Pacific Company, have no greater rights in respect to the lands in controversy than has the railroad company is clearly shown by the decision of the Circuit Court in United States vs. Southern Pacific Co., 86 Fed. 962, and authorities above cited.

6. That the land claimed by the defendant Crawford was not subject to settlement by him in 1887, is settled by the principles announced in Hewitt vs. Schultz, recently decided by the Supreme Court.

Upon an examination of the whole case we find no error.

The decree of the Circuit Court is, upon all points, affirmed.

[Endorsed]: Opinion. Filed May 20, 1901. F. D. Monckton, Clerk.

United States Circuit Court of Appeals for the Ninth Circuit.

THE SOUTHERN PACIFIC RAILROAD COMPANY et al.,
Appellants,
vs.
THE UNITED STATES OF AMERICA,
Appellee.
No. 584.

Decree. (U. S. C. C. A.)

Appeal from the Circuit Court of the United States for the Southern District of California.

This cause came on to be heard on the transcript of the record from the Circuit Court of the United States for the Southern District of California, and was argued by counsel.

On consideration whereof, it is now here ordered, adjudged, and decreed by this Court that the decree of the

said Circuit Court in this cause be, and the same is hereby, affirmed.

[Endorsed]: Decree. Filed and entered May 20, 1901. F. D. Monckton, Clerk.

At a stated term, to wit, the October term, A. D. 1901, of the United States Circuit Court of Appeals for the Ninth Circuit, held at the courtroom, in the city and county of San Francisco, on Monday, the fifth day of August, in the year of our Lord one thousand nine hundred and one. Present: The Honorable WILLIAM W. MORROW, Circuit Judge; Honorable JOHN J. DE HAVEN, District Judge.

THE SOUTHERN PACIFIC RAILROAD COMPANY et al.,
Appellants,
vs.
THE UNITED STATES OF AMERICA,
Appellee.
No. 584.

Order Allowing Appeal to Supreme Court.

On motion of Mr. Wm. Singer, Jr., attorney for the appellants in this cause, it is ordered that an appeal be, and hereby is, allowed the said appellants to the Supreme Court of the United States from the decree of this Court filed and entered herein on May 20th, 1901.

In the United States Circuit Court of Appeals, Ninth Circuit.

IN EQUITY.

SOUTHERN PACIFIC RAILROAD COMPANY et al.,
Defendants and Appellants,
vs.
UNITED STATES OF AMERICA,
Plaintiff and Appellee.
} No. 584.

Petition for Appeal to Supreme Court of the United States.

The above-named defendants, conceiving themselves aggrieved by the decree made and entered herein on May 20th, 1901, appeal therefrom to the Supreme Court of the United States, for the reasons specified in their assignment of errors filed herewith; and they pray that their appeal may be allowed, and that a transcript of the record, proceedings and papers upon which the said decree was made, duly authenticated, may be sent to the Supreme Court of the United States.

Your petitioners further pray that upon giving a good and sufficient bond to be approved by this Court, all proceedings in this cause, and upon the said decree, may be stayed pending their appeal.

WM. SINGER, Jr.,
Attorney for the Defendants.

WM. F. HERRIN,
Counsel for the Defendants.

Order Allowing Appeal and Supersedeas.

The foregoing claim of appeal and prayer for supersedeas are allowed and granted; the supersedeas to take effect upon the filing of a good and sufficient bond in the sum of three thousand dollars, conditioned that the appellants shall prosecute their appeal to effect, and answer all damages and costs if they fail to make their appeal good.

It is further ordered that a transcript of the record, proceedings, and papers upon which the said decree was made, under the seal of this Court and the hand of its clerk, be sent to the Supreme Court of the United States.

San Francisco, October 2, 1901.

WM. W. MORROW,
Judge.

[Endorsed]: Petition for Appeal and Order Allowing Appeal, etc. Filed October 2d, 1901. F. D. Monckton, Clerk.

In the United States Circuit Court of Appeals, Ninth Circuit.

IN EQUITY.

SOUTHERN PACIFIC RAILROAD COMPANY et al.,
Defendants and Appellants,
vs.
UNITED STATES OF AMERICA,
Plaintiff and Appellee.
No. 584.

Assignment of Errors.

The above-named defendants, by the undersigned, their attorney and counsel, in connection with their petition for appeal herein, say that the decree in the above-entitled cause, made and entered on May 20th, 1901, is erroneous and against their just rights in the following particulars; that is to say:

I.

The Court erred in deciding that the United States is the owner, by title in fee-simple absolute, unencumbered, or by any title or at all, of any of the lands described as follows in the decree of the Circuit Court (vol. V., p. 779), affirmed by the said decree of this Court, to wit: All of the sections and parts of sections of land in the State of California, surveyed and unsurveyed, designated by odd numbers, within twenty miles on each side of the line of route of the Texas Pacific Railroad Company,

from a point near Marshall, in the State of Texas, westwardly, to the bay of San Diego, as designated and established by the map of general route filed by said Texas Pacific Railroad Company in the general land office and in the Department of the Interior on the fifteenth day of October, in the year one thousand eight hundred and seventy-one, a copy of which said map was introduced in evidence in this cause, and is now on file herein, and to which map reference is hereby made, in so far as said lands, or any part thereof, are situated within thirty miles on either side of the designated line of route of the Southern Pacific Railroad Company between the Colorado River, at a point near Fort Yuma, and Los Angeles, California, as designated and established by said Southern Pacific Railroad Company by its map designating such line of railroad as located and constructed, and the map designating the fifth section of said railroad through the said lands having been so filed in the Interior Department on the thirty-first day of January, in the year one thousand eight hundred and seventy-eight.

1st. Because, as shown by the evidence, a large portion of the lands so described are odd sections, situated within the primary limits of the land grant made to the defendant Southern Pacific Railroad Company by section 23 of the Act of Congress, entitled "An act to incorporate the Texas Pacific Railroad Company, and to aid in the construction of its road, and for other purposes," approved on March 3d, 1871, and are not embraced by any exception to the grant of lands thereby made; and the

defendant Southern Pacific Railroad Company duly constructed the railroad contemplated, in aid of which the said grant was made, and fully performed the conditions imposed by the said act of Congress; and the railroad so constructed was duly accepted and approved by the proper officers of the United States. The defendants are, therefore, owners by title in fee simple, absolute and indefeasible, of all the lands in this paragraph referred to.

2d. Because the remainder of the said lands are odd sections, situated within the indemnity limits of the land grant made to the defendant Southern Pacific Railroad Company by the act of Congress mentioned in the next preceding paragraph hereof, and are not embraced by any exception to the grant of lands thereby made; and all the odd sections within the primary limits and indemnity limits of the land grant made to the defendant Southern Pacific Railroad Company by the said act of Congress, not finally disposed of by the United States prior to March 3d, 1871, are insufficient to make or equal the amount of land thereby granted to the defendant Southern Pacific Railroad Company. For these reasons, and the other reasons set forth in the next preceding paragraph hereof, the defendants are also the owners by title in fee simple, absolute and indefeasible, of all the lands referred to in this paragraph.

3d. Because some of the lands referred to in the next preceding paragraph hereof were duly selected by the defendant Southern Pacific Railroad Company, under direction of the Secretary of the Interior, as indemnity

lands granted to it by the said act of Congress. As to all which selected lands the defendants are, for the reasons hereinbefore set forth, entitled to the issue of patents from the United States to the defendant Southern Pacific Railroad Company; and are also entitled to select and receive patents for all of the lands referred to in the 1st and 2d paragraphs hereof, which remain unselected.

4th. Because the defendants D. O. Mills and Homer S. King are trustees under a deed of trust duly made and executed to them on April 1st, 1875, by the defendant Southern Pacific Railroad Company, and the defendant Central Trust Company of New York is trustee under a deed of trust made and executed to it on August 25th, 1888, by the defendant Southern Pacific Railroad Company; which deeds of trust conveyed all of the said lands to secure the payment of, and out of the proceeds of the sale of the lands so conveyed to redeem and pay, a large number of bonds issued and sold by the defendant Southern Pacific Railroad Company for several millions of dollars paid to it by numerous bona fide purchasers thereof, who still hold the bonds so purchased, unpaid. The said trustee defendants are, therefore, bona fide purchasers of all the lands so conveyed to them, and as to such of those lands as have been patented by the United States to the defendant Southern Pacific Railroad Company, the right and title of the said trustee defendants is confirmed by the act of Congress, entitled "An act to provide for the extension of time within which suits may be brought to vacate and annul land patents, and for other purposes," approved on March 2d, 1896.

II.

The Court erred in ordering, adjudging, or decreeing that the defendants, either or any of them, be enjoined or restrained from having or claiming any right, title, or interest in, or lien upon, all or any of the said lands, for the reasons set forth in assignment "I" hereof.

III.

The Court erred in ordering, adjudging, or decreeing that the title to the said lands is quieted in the United States, for the reasons set forth in assignment "I" hereof.

IV.

For the reasons hereinbefore assigned, the Court erred in ordering, adjudging, and decreeing (by affirming the decree of the Circuit Court) "that the parties to these consolidated cases, plaintiffs and defendants shall each pay their own costs"; and in not adjudging that the defendants have and recover their costs.

Wherefore, the defendants (appellants) pray that the said decree be reversed in all the respects and particulars herein assigned and specified as error; and that the said Circuit Court be directed to enter a decree dismissing the bill of complaint of the plaintiff in each and all of the cases mentioned on the title page of the said decree.

WM. SINGER, Jr.,
Attorney for the Defendants.

WM. F. HERRIN,
Counsel for the Defendants.

[Endorsed]: Assignment of Errors. Filed October 2d, 1901. F. D. Monckton, Clerk.

In the United States Circuit Court of Appeals, Ninth Circuit.

IN EQUITY.

SOUTHERN PACIFIC RAILROAD COMPANY et al.,
Defendants and Appellants,
vs.
UNITED STATES OF AMERICA,
Plaintiff and Appellee.
No. 584.

Bond on Appeal.

We, N. T. Smith and Wm. H. Mills, of the county of San Mateo, and of the city and county of San Francisco, respectively, State of California, are held and firmly bound unto the United States of America, in the sum of three thousand (3,000) dollars, for the payment of which, well and truly to be made, we bind ourselves, our and each of our heirs, executors, and administrators, jointly and severally, firmly by these presents.

The above-named defendants and appellants have been allowed an appeal to the Supreme Court of the United States, and a supersedeas, from the decree entered in the above-entitled Court and cause on May 20th, 1901; and the condition of this obligation is, that if the appellants shall prosecute their said appeal to effect, and answer all damages and costs if they fail to make their

appeal good then this obligation to be void; otherwise to remain in full force.

Dated, signed, and sealed on October 2d, 1901.

N. T. SMITH. [Seal]

WM. H. MILLS. [Seal]

Acknowledged before me on October, , 1901.

[Seal] E. B. RYAN,

Notary Public in and for the City and County of San Francisco, State of California.

State of California,
City and County of San Francisco. } ss.

N. T. Smith and Wm. H. Mills, being duly sworn each for himself deposes and says: I am a householder in the Northern District of California, and am worth the sum of three thousand (3,000) dollars, exclusive of property exempt from execution, and over and above all my just debts and liabilities, in property within the said district.

N. T. SMITH.

WM. H. MILLS.

Subscribed and sworn to before me on October 2d, 1901.

[Seal] E. B. RYAN,

Notary Public in and for the City and County of San Francisco, State of California.

The foregoing bond is approved.

WM. W. MORROW,

Judge.

[Endorsed]: Bond on Appeal. Filed October 2d, 1901. F. D. Monckton, Clerk.

United States Circuit Court of Appeals for the Ninth Circuit.

THE SOUTHERN PACIFIC RAILROAD COMPANY et al.,
Appellants,
vs.
THE UNITED STATES OF AMERICA,
Appellee.
No. 584.

Certificate of Clerk C. C. A. to Transcript.

I, Frank D. Monckton, Clerk of the United States Circuit Court of Appeals for the Ninth Circuit, do hereby certify the foregoing two thousand four hundred and seventy-nine (2,479), pages, numbered from one (1) to two thousand four hundred and seventy-nine (2,479), inclusive, to be a true copy of the record and of the assignment of errors, and of all proceedings in the above-entitled case, as the same appear of record in my office, and that the same together constitute the transcript on appeal herein to the Supreme Court of the United States.

Attest my hand and the seal of said United States Circuit Court of Appeals for the Ninth Circuit at San Francisco, California, this 10th day of October, A. D. 1901.

[Seal] F. D. MONCKTON,
Clerk.

Citation.

UNITED STATES OF AMERICA—ss.

To the United States of America, Greeting:

You are hereby cited and admonished to be and appear at the Supreme Court of the United States, to be holden at Washington, D. C., on November 30, 1901, pursuant to an appeal filed in the clerk's office of the United States Circuit Court of Appeals for the Ninth Circuit, wherein the Southern Pacific Railroad Company and others are appellants, and the United States of America is appellee, to show cause, if any there be, why the decree rendered on May 20th, 1901, by the said United States Circuit Court of Appeals against the appellants, should not be corrected, and why speedy justice should not be done to the parties in that behalf.

Given under my hand, at the city of San Francisco, in the Ninth Circuit, on October 2d, 1901.

WM. W. MORROW,
Judge.

Due service of the foregoing citation by copy admitted on October 10th, 1901.

JOSEPH H. CAL[illegible]
Special Assistant United States Attorney, and of Counsel for the Appellee.

[Endorsed]: No. 584. United States Circuit Court of Appeals, Ninth Circuit. Southern Pacific Railroad Co. et al. vs. United States of America. Citation. Filed October 14, 1901. F. D. Monckton, Clerk.